

FIG. 1

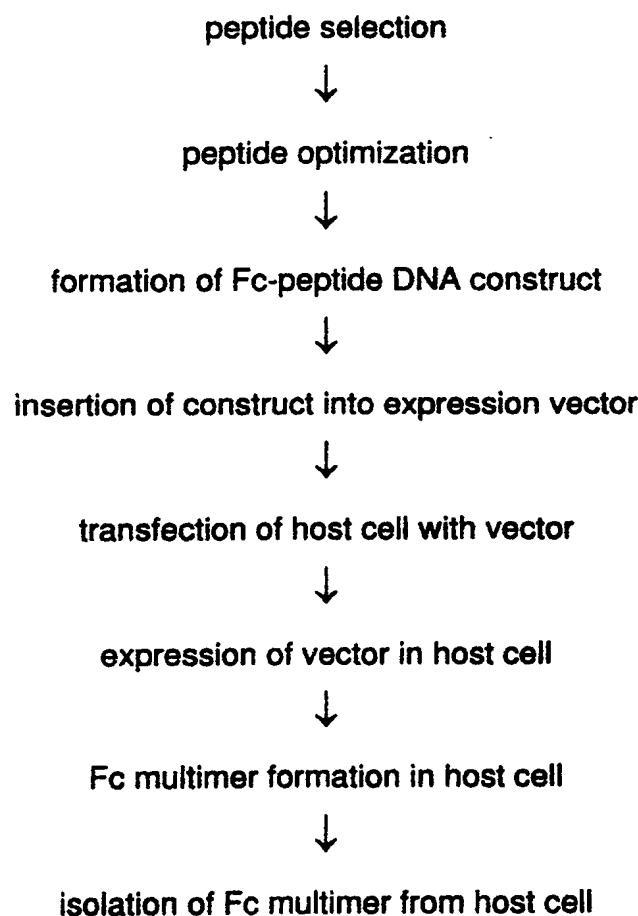


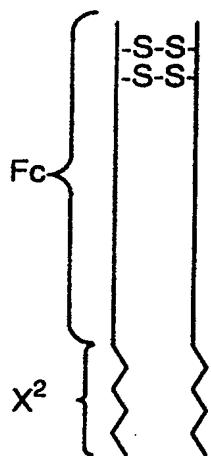
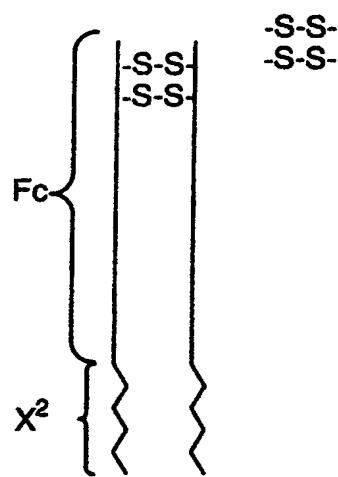
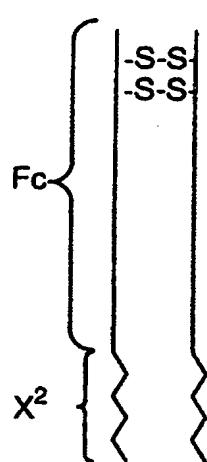
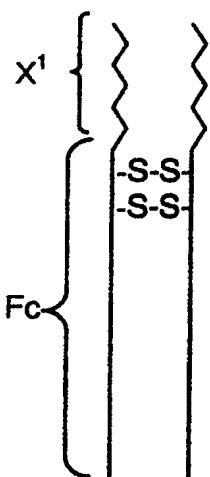
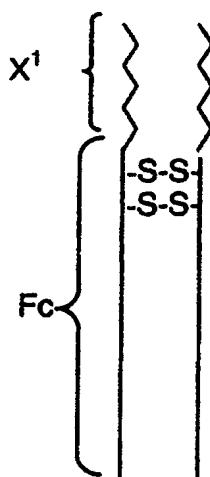
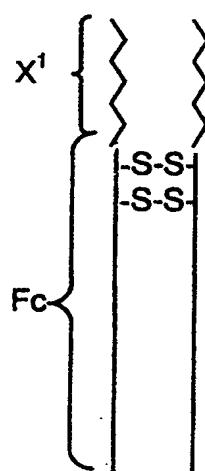
FIG. 2A**FIG. 2B****FIG. 2C****FIG. 2D****FIG. 2E****FIG. 2F**

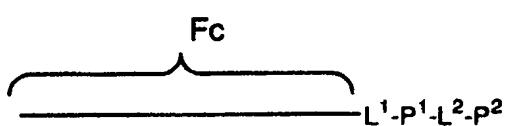
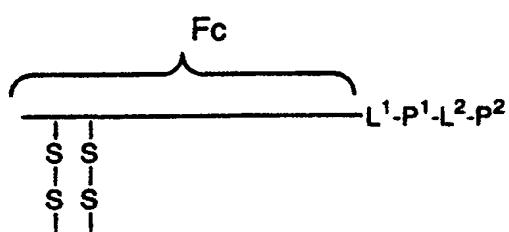
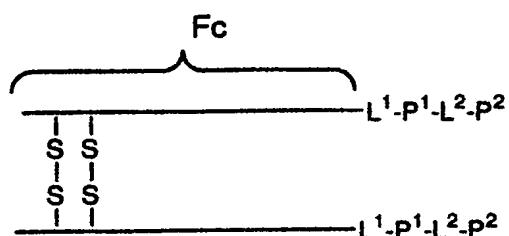
FIG. 3A**FIG. 3B****FIG. 3C**

FIG. 4

ATGGACAAAACACATGTCCACCTTGTCCAGCTCCGAACCTCTGGGGGACCGTCA
 1 TACCTGTTTGAGTGTACAGGTGAAACAGGTGAGGCCTTGAGGACCCCCCTGGCAGT 60
 a M D K T H T C P P C P A P E L L G G P S -
 GTCTCCTCTTCCCCCAAAACCAAGGACACCCCTCATGATCTCCGGACCCCTGAGGTC
 61 CAGAAGGAGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGGGCTGGGACTCCAG 120
 a V F L F P P K P K D T L M I S R T P E V -
 ACATGCGTGGTGGTGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTACGTG
 121 TGTACGGCACCACCACTGCACCTGGCTCTGGACTCCAGTTCAAGTTGACCATGCAC 180
 a T C V V V D V S H E D P E V K F N W Y V -
 GACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCACG
 181 CTGCCGCACCTCACGTATTACGGTTCTGTTGGCGCCCTCCTCGTCATGTTGTCGTGC 240
 a D G V E V H N A K T K P R E E Q Y N S T -
 TACCGTGTGGTCAGCGTCCACCGTCTGCACCAAGGACTGGCTGAATGGCAAGGAGTAC
 241 ATGGCACACCAGTCGAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTCCATG 300
 a Y R V V S V L T V L H Q D W L N G K E Y -
 AAGTGCAAGGTCTCAACAAAGCCCTCCAGCCCCATCGAGAAAACCATCTCCAAAGCC
 301 TTCACGTTCCAGAGGTGTTGGGAGGGTAGGCTTTGGTAGAGGTTTCGG 360
 a K C K V S N K A L P A P I E K T I S K A -
 AAAGGGCAGCCCCGAGAACACAGGTGTACACCCCTGCCCATCCGGATGAGCTGACC
 361 TTTCCCGTCGGGCTCTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGACTGG 420
 a K G Q P R E P Q V Y T L P P S R D E L T -
 AAGAACCGAGTCAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATGCCGTG
 421 TTCTGGTCCAGTCGAGTGGACGGACCGAGTTCCGAAGATAGGTCGCTGTAGCGGCAC 480
 a K N Q V S L T C L V K G F Y P S D I A V -
 GAGTGGGAGAGCAATGGCAGCCGGAGAACAACTACAAGACCAAGCCTCCGTGCTGGAC
 481 CTCACCCCTCTCGTTACCGTCGGCCTTGTGATGTTCTGGTGCGGGACGACCTG 540
 a E W E S N G Q P E N N Y K T T P P V L D -
 TCCGACGGCTCCTCTTCCCTACAGCAAGCTACCGTGACAAGAGCAGGTGGCAGCAG
 541 AGGCTGCCGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC 600
 a S D G S F F L Y S K L T V D K S R W Q Q -
 GGGAACGTCTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCAACTACACGCAGAAG
 601 CCCTTGCAGAAGAGTACGAGGCACTACGTACTCCGAGACGTGTTGGTATGTCGTCTC 660
 a G N V F S C S V M H E A L H N H Y T Q K -
 AGCCTCTCCCTGTCTCCGGTAAA
 661 TCGGAGAGGGACAGAGGCCATT 684

FIG. 5

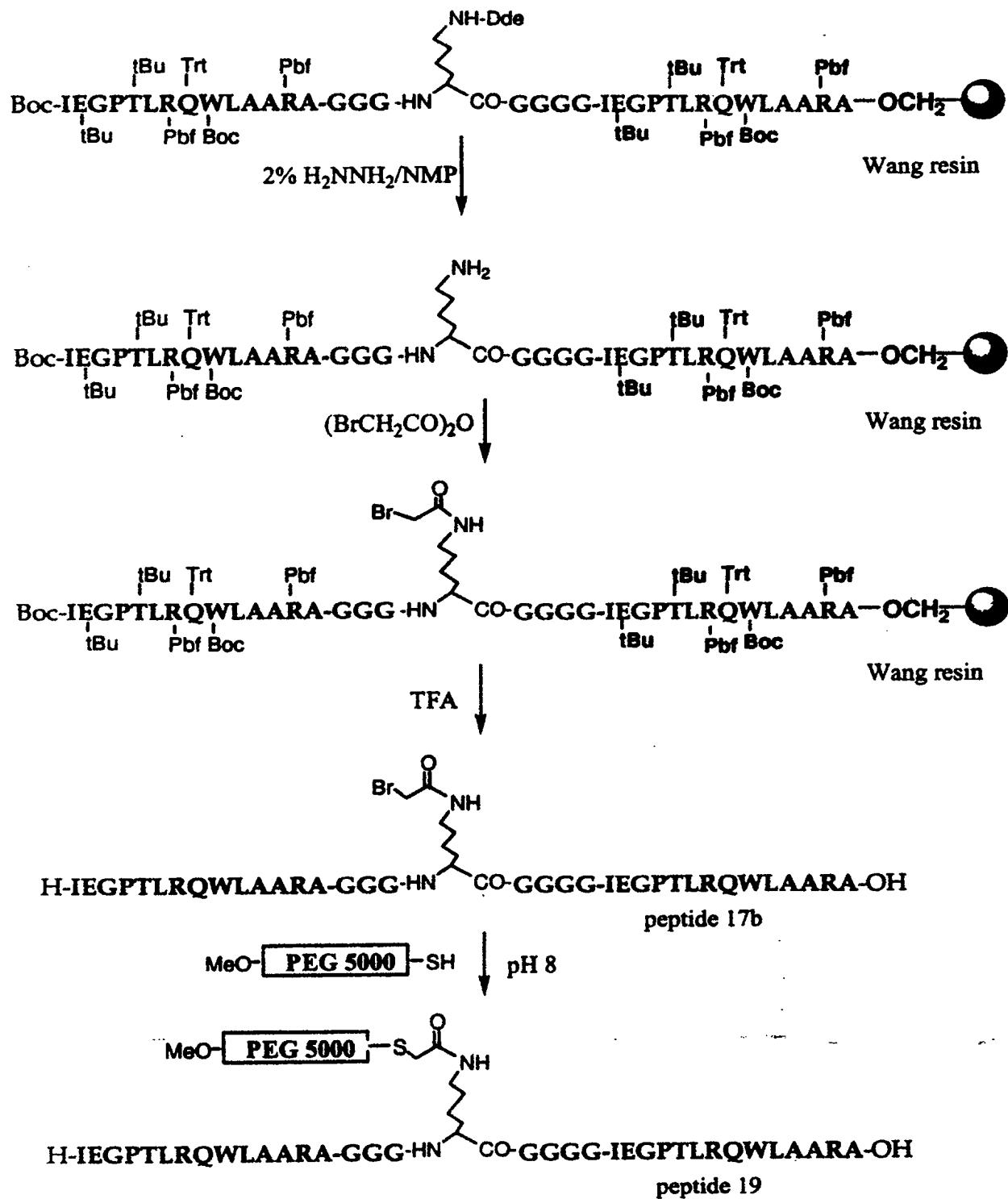


FIG. 6

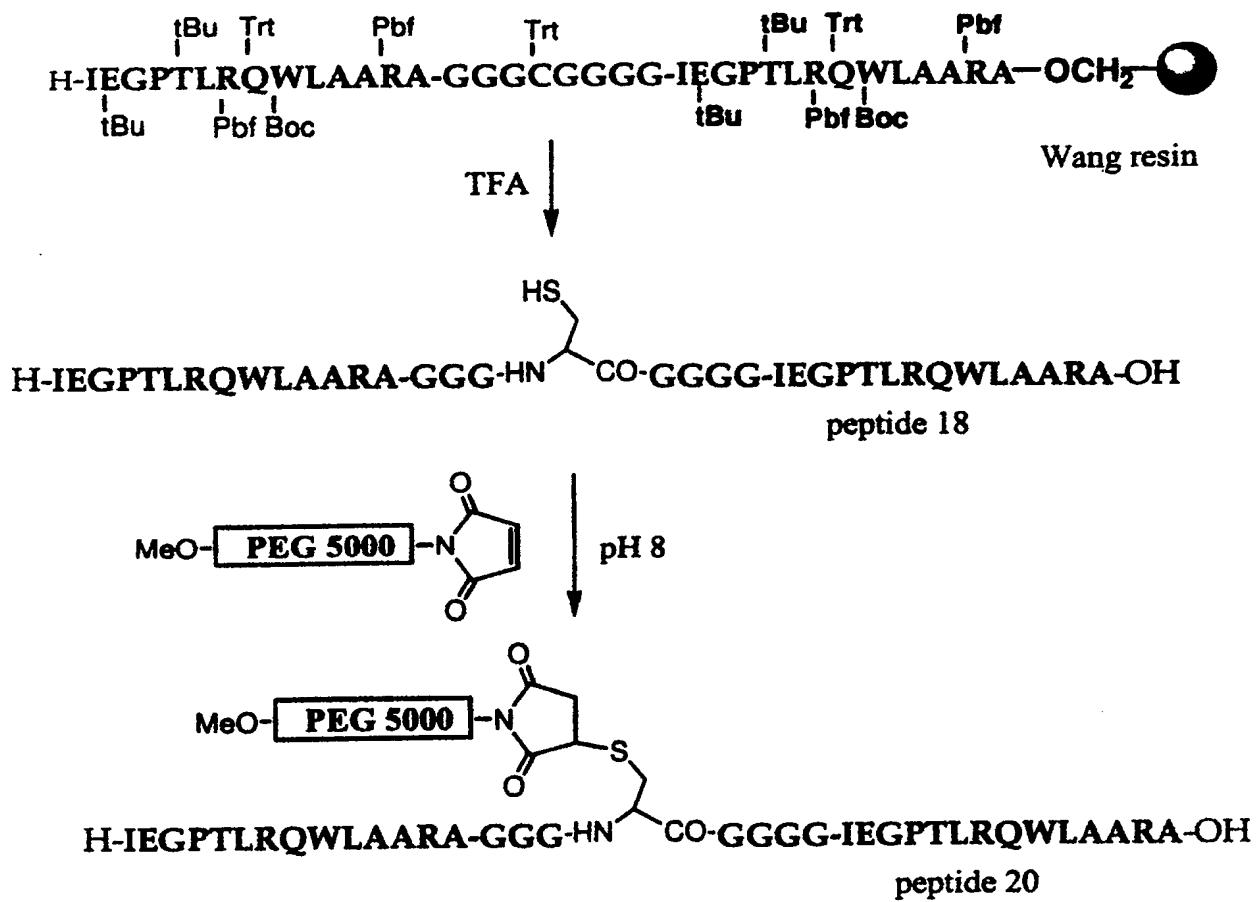


FIG. 7

XbaI

1 TCTAGATTGTTTAACATAATTAAAGGAGGAATAACATATGGACAAACTCACACATGTC
1 AGATCTAACAAAATTGATTAATTCCCTTATTGTATACTGTTTGAATGTGTACAG
C M D K T H T C P -

61 CACCTTGTCCAGCTCCGGAACTCCTGGGGGGACCGTCAGTCTTCCCTTCCCCCCTTAAAC
61 GTGGAACAGGTGAGGGCTTGAGGACCCCTGGCAGTCAGAAGGAAGGGGGTTTG
C P C P A P E L L G G P S V F L F P P K P -

121 CCAAGGACACCCCTCATGATCTCCGGACCCCTGAGGTACATGCGTGGTGGACGTGA
121 GGTTCCCTGTGGAGTACTAGAGGGCTGGGACTCCAGTGTACGCACCACCTGCACT
C K D T L M I S R T P E V T C V V V D V S -

181 GCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATG
181 CGGTGCTTCTGGACTCCAGTTCAAGTTGACCATGCACCTGCCGCACCTCCACGTATTAC
C H E D P E V K F N W Y V D G V E V H N A -

241 CCAAGACAAAGCCGGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCCCTCA
241 GGTTCTGTTCGGCCCTCCTCGTATGTTGTGTCATGGCACACCAGTCGAGGAGT
C K T K P R E E Q Y N S T Y R V V S V L T -

301 CCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAAACAAAG
301 GGCAGGACGTGGCTGACCGACTTACCGTCCCTCATGTTCACGTTCCAGAGGTTGTTTC
C V L H Q D W L N G K E Y K C K V S N K A -

361 CCCTCCCAGCCCCATCGAGAAAACCATCTCAAAGCCAAAGGGCAGCCCCGAGAACAC
361 GGGAGGGTCGGGGTAGCTCTTTGGTAGAGGTTCGGTTCCCGTCGGGCTCTGGTG
C L P A P I E K T I S K A K G Q P R E P Q -

421 AGGTGTACACCCCTGCCCCCATCCGGATGAGCTGACCAAGAACCAAGGTCAAGCCTGACCT
421 TCCACATGTGGACGGGGTAGGGCCCTACTCGACTGGTCTTGGTCCAGTCGGACTGGA
C V Y T L P P S R D E L T K N Q V S L T C -

481 GCCTGGTCAAAGGCTTCTATCCCAGCGACATGCCGTGGAGTGGAGAGCAATGGCAGC
481 CGGACCAAGTTCCGAAGATAAGGTGCGCTGTAGCGGCACCTCACCTCTCGTACCCGTG
C L V K G F Y P S D I A V E W E S N G Q P -

541 CGGAGAAACAACATACAAGACCAACGCCCTCCCGTGCTGGACTCCGACGGCTCCCTTCTTCT
541 GCCTCTTGTGATGTTCTGGTGGGAGGGCACCGACCTGAGGCTGCCGAGGAAGAAGGGAGA
C E N N Y K T T P P V L D S D G S F F L Y -

601 ACAGCAAGCTACCGTGGACAAGAGCAGGTGGCAGCAGGGAAACGTCTCTCATGCTCCG
601 TGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCCTGAGAAGAGTACGAGGC
C S K L T V D K S R W Q Q G N V F S C S V -

661 TGATGCATGAGGCTCTGCACAACCAACTACACGCAGAAGAGCCTCTCCGTCTCCGGTA
661 ACTACGTACTCCGAGACGTGGTGTGATGTGCGTCTCTCGAGAGGGACAGAGGCCAT
C M H E A L H N H Y T Q K S L S L S P G K -

721 AAGGTGGAGGTGGTGTATCGAAGGTCCGACTCTGCGTCAGTGGCTGGCTGCTCGTGT
721 TTCCACCTCCACCACTAGCTCCAGGCTGAGACGCAGTCACCGACCGACGACGAA
C G G G G I E G P T L R Q W L A A R A * -

BamHI

781 AATCTCGAGGATCC
781 TTAGAGCTCCTAGG 794

FIG. 8

XbaI

1 TCTAGATTTGTTTAACATAATTAAAGGAGGAATAACATATGGACAAAACACATGTC
1 AGATCTAACAAAATTGATTAATTCTCCTTATTGTATACCTGTTTGAGTGTGTACAG
c M D K T H T C P - 60

61 CACCTTGTCCAGCTCCGGAACTCCTGGGGGGACCGTCAGTCCTCCTCTTCCCCC
c AAC 120
61 GTGGAACAGGTGAGGCCCTGAGGACCCCCCTGGCAGTCAGAAGGAGAAGGGGGTTTG
c P C P A P E L L G G P S V F L F P P K P -

121 CCAAGGACACCCCTCATGATCTCCGGACCCCTGAGGTACATGCGTGGTGGACGTGA
c 180
121 GTTCTGTGGAGTACTAGAGGCTGGGACTCCAGTGTACGCACCAACCTGCACT
c K D T L M I S R T P E V T C V V V D V S -

181 GCCACGAAGACCCCTGAGGTCAAGTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATG
c 240
181 CGGTGCTCTGGACTCCAGTTCAAGTTGACCATGCACCTGGCACCCTCCACGTATTAC
c H E D P E V K F N W Y V D G V E V H N A -

241 CCAAGACAAAGCCGGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCC
c 300
241 GGTTCTGTTGGCGCCCTCTCGTCAATGTTGCGTGCATGGCACACCAGTCGAGGAGT
c K T K P R E E Q Y N S T Y R V V S V L T -

301 CCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCAACAAAG
c 360
301 GGCAGGACGTGGCTGTGACCGACTTACCGTCTCATGTTACGTTCCAGGGTTGTTTC
c V L H Q D W L N G E Y K C K V S N K A -

361 CCCTCCCAGCCCCATCGAGAAAACATCTCAAAGCAAAGGGCAGCCCAGAACACAC
c 420
361 GGGAGGGTCGGGGTAGCTCTTTGGTAGAGGTTTCGGTTCCCGTCGGGCTCTGGTG
c L P A P I E K T I S K A K G Q P R E P Q -

421 AGGTGTACACCCCTGCCCCCATCCGGGATGAGCTGACCAAGAACCAAGGTAGCCTGAC
c 480
421 TCCACATGTGGGACGGGGTAGGGCCCTACTCGACTGGTCTGGTCCAGTCGGACTGGA
c V Y T L P P S R D E L T K N Q V S L T C -

481 GCCTGGTCAAAGGCTCTATCCCAGCGACATCGCCGTGGAGTGGAGAGCAATGGCAGC
c 540
481 CGGACCAAGTTCCGAAGATAAGGTCGCTGTAGCGGCACCTCACCCCTCTCGTTACCC
c L V K G F Y P S D I A V E W E S N G Q P -

541 CGGAGAACAACTACAAGAACACGCCCTCCGTGCTGGACTCCGACGGCTCTTCC
c 600
541 GCCTCTGTTGATGTTCTGGTGCAGGGCACCTGAGGCTGCCAGGAAGAAGGAGA
c E N N Y K T T P P V L D S D G S F F L Y -

601 ACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGAAACGTCTTCTCATGCT
c 660
601 TGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCTTGAGAAGAGTACGAGGC
c S K L T V D K S R W Q Q G N V F S C S V -

661 TGATGCATGAGGCTCTGCACAACCACTACACGAGAAGACCCCTCCCTGTCTCCGGTA
c 720
661 ACTACGTAACCGAGACGTGGTGTGATGTGCGTCTCTCGAGAGGGACAGAGGCCAT
c M H E A L H N H Y T Q K S L S L S P G K -

721 AAGGTGGAGGGTGGTGGTATCGAAGGTCCGACTCTCGTCAGTGGCTGGCTGCTCGTGT
c 780
721 TTCCACCTCCACCAACCATAGCTTCCAGGCTGAGACGCGACTCACCGACCGAGCAGC
c G G G G G I E G P T L R Q W L A A R A G -

781 GTGGTGGAGGGTGGCGGGAGGTATTGAGGGCCCAACCCCTCGCCAATGGCTTGCAGC
c 840
781 CACCAACCTCCACCGCCGCCCTCCATAACTCCGGGTTGGGAAGCGGTACCGAACGTC
c G G G G G G I E G P T L R Q W L A A R -

BamHI

841 GCGCATAATCTCGAGGATCCG 861
841 CGCGTATTAGAGCTCCTAGGC

FIG. 9

XbaI

1 TCTAGATTTGTTAACTAATTAAAGGAGGAATAACATATGATCGAAGGTCCGACTCTGC
1 AGATCTAACAAAATTGATTAATTCCCTTATTGTATACTAGCTCCAGGCTGAGACG
c M I E G P T L R - 60

61 GTCAGTGGCTGGCTGCTCGTGGCGTGGCGGGAGGGGGTGGCATTGAGGGCCAA
c CAGTCACCGACCGACGAGCACCGCCACCACCGCTCCCCACCGTAACCTCCGGTT
c Q W L A A R A G G G G G G G G I E G P T - 120

121 CCCCTCGCCAATGGCTTGACAGCACGCCAGGGGGAGGCCGGTGGGACAAAACATCACACAT
c GGGAAACGGTTACCGAACGTCGTGGCGTCCCCCTCCGCCACCCCTGGTGGAGTGTGTA
c L R Q W L A A R A G G G G G G D K T H T C - 180

181 GTCCACCTGCCAGCACCTGAACCTGGGGGACCGTCAGTTTCCCTCTCCCCCAA
c CAGGTGGAACGGGCTGTGGACTGTGAGGACCCCCCTGGCAGTCACAAAGGAGAACGGGGTT
c P P C P A P E L L G G P S V F L F P P K - 240

241 AACCCAAGGACACCCATGATCTCCCCGACCCCTGAGGTACATGCGTGGTGGAGC
c TTGGGTTCTGTGGAGTACTAGAGGGCCTGGGACTCCAGTGTACGCACCAACCTGC
c P K D T L M I S R T P E V T C V V V D V - 300

301 TGAGCCACGAAGACCCCTGAGGTCAAGTCAACTGGTACGTGGACGGCGTGGAGGTGCATA
c ACTCGGTGCTCTGGGACTCCAGTCAAGTTGACCATGCACCTGCCACCTCCACGTAT
c S H E D P E V K F N W Y V D G V E V H N - 360

361 ATGCCAAGACAAGCCGGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCC
c TACGGTTCTGTGGCGCCCTCCTCGTATGTTGTCGTGCATGGCACACCAGTCGCAGG
c A K T K P R E E Q Y N S T Y R V V S V L - 420

421 TCACCGTCTGCACCAAGGACTGGCTGAATGCAAGGAGTACAAGTCAAGGTCTCCAACA
c AGTGGCAGGACGTGGCTCTGACCGACTTACCGTTCTCATGTTACGTTCCAGAGGTGT
c T V L H Q D W L N G K E Y K C K V S N K - 480

481 AAGCCCTCCCAGCCCCATCGAGAAAACATCTCAAAGCAAAGGGCAGCCCGAGAAC
c TTGGGGAGGGTCGGGGTAGCTCTGGTAGAGGTTTCGGTTCCCGTCGGGCTCTG
c A L P A P I E K T I S K A K G Q P R E P - 540

541 CACAGGTGTACACCCCTGCCCATCCCCGGATGAGCTGACCAAGAACCAAGGTGAGCCTGA
c GTGTCCACATGTGGGACGGGGTAGGGCCACTCGACTGGTCTGGTCCAGTCGGACT
c Q V Y T L P P S R D E L T K N Q V S L T - 600

601 CCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATGCCGTGGAGTGGAGAGCAATGGC
c GGACGGACCAGTTCCGAAGATAAGGTCGCTGTAGCGGCACCTCACCCCTCGTTACCG
c C L V K G F Y P S D I A V E W E S N G Q - 660

661 AGCCGGAGAACAACTACAAGAACCAAGCCCTCCGTGGACTCCGACGGCTCTTCTCC
c TCGGCCTCTGTGATGTTCTGGTGCAGGGCACGACCTGAGGCTGCCAGGAAGAAG
c P E N N Y K T T P P V L D S D G S F F L - 720

721 TCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCTCTCATGCT
c AGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCCCTGAGAACAGTACGA
c Y S K L T V D K S R W Q Q G N V F S C S - 780

781 CCGTGTGATGAGGCTCTGCCACAACCAACTACACCGCAGAAGAGCCTCTCCGTCTCCGG
c GGCACACTACGTACTCCGAGACGTGTTGGTGTGCGTCTCTCGGAGAGGGACAGAGGCC
c V M H E A L H N H Y T Q K S L S L S P G - 840

BamHI

841 GTAAATAATGGATCC 855
c CATTATTACCTAGG
c K *

FIG. 10

XbaI

1 TCTAGATTGTTAACTAATTAAAGGAGGAATAACATATGATCGAAGGTCCGACTCTGC
1 AGATCTAAACAAAATTGATTAATTCCCTCCTATTGTATACTAGCTCCAGGCTGAGACG
c M I E G P T L R -
61 GTCAGTGGCTGGCTGCTCGTGCTGGTGGAGGGCGGTGGGACAAAACACATGTCCAC
c CAGTCACCGACCGACGAGCACGACCACCTCCGCCACCCCTGTTTGAGTGTGTACAGGTG
c Q W L A A R A G G G G G D K T H T C P P -
121 CTTGCCAGCACCTGAACCTCCTGGGGGACCGTCAGTTTCCCTCTTCCCCCAAAACCA
c GAACGGGTCGTGGACTTGAGGACCCCCCTGGCAGTCAAAAGGAGAAGGGGGGTTTGGGT
c C P A P E L L G G P S V F L F P P K P K -
181 AGGACACCCCATGATCTCCGGACCCCTGAGGTACATGCGTGGTGGACGTGAGCC
c TCCCTGGGAGTACTAGAGGGCTGGGACTCCAGTGTACGCACCACCTGCACTCGG
c D T L M I S R T P E V T C V V V D V S H -
241 ACGAAGACCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCA
c TGCTTCTGGACTCCAGTTCAAGTTGACCATGCAACCTGCCGCACCTCACGTATTACGGT
c E D P E V K F N W Y V D G V E V H N A K -
301 AGACAAAGCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCCACCG
c TCTTTCTGGCGCCCTCTCGTCATGTTGTCGTGCATGGCACACCAGTCGCAGGAGTGGC
c T K P R E E Q Y N S T Y R V V S V L T V -
361 TCCCTGACCAAGGACTGGCTGAATGGCAAGGAGTACAAGTCAAGGTCTCAAACAAAGCC
c AGGACGTGGTCTGACCGACTTACCGTCTCATGTTCACGTTCCAGAGGTTGTTGGG
c L H Q D W L N G K E Y K C K V S N K A L -
421 TCCCAGCCCCATCGAGAAAACCATCTCAAAGCCAAAGGGCAGCCCCGAGAACCCACAGG
c AGGGTCGGGGTAGCTCTTGGTAGAGGTTCCGTTCCGTCGGCTTGGTGTCC
c P A P I E K T I S K A K G Q P R E P Q V -
481 TGTACACCCCTGCCCCATCCGGATGAGCTGACCAAGAACAGGTCAGCCTGACCTGCC
c ACATGTGGGACGGGGTAGGGCCCTACTCGACTGGTCTGGTCCAGTCGGACTGGACGG
c Y T L P P S R D E L T K N Q V S L T C L -
541 TGGTCAAAGGCTCTATCCAGCGACATGCCGTGGAGTGGAGAGACAATGGCAGCCGG
c ACCAGTTCCGAAGATAAGGGTCGCTGTAGCGGCACCTCACCCCTCGTTACCCGTCGGCC
c V K G F Y P S D I A V E W E S N G Q P E -
601 AGAACAACTACAAGACCAAGCCTCCGTCTGGACTCCGACGGCTCCTCTTCCCTACA
c TCTTGTGATGTTCTGGTCCGGAGGGCACGACCTGAGGCTGCCGAGGAAGAAGGAGATGT
c N N Y K T T P P V L D S D G S F F L Y S -
661 GCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGAACGTCTTCTCATGCTCCGTGA
c CGTTCGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCTGAGAAGAGTACGAGGCAC
c K L T V D K S R W Q Q G N V F S C S V M -
721 TGCATGAGGCTCTGCACAACCACTACACGAGAACAGGCCTCTCCCTGTCTCCGGTAAAT
c ACGTACTCCGAGACGTGGTAGTGTGCGTCTCTCGGAGAGGGACAGAGGCCATTAA
c H E A L H N H Y T Q K S L S L S P G K * -
781 BamHI
AATGGATCC
789
TTACCTAGG

FIG. 11

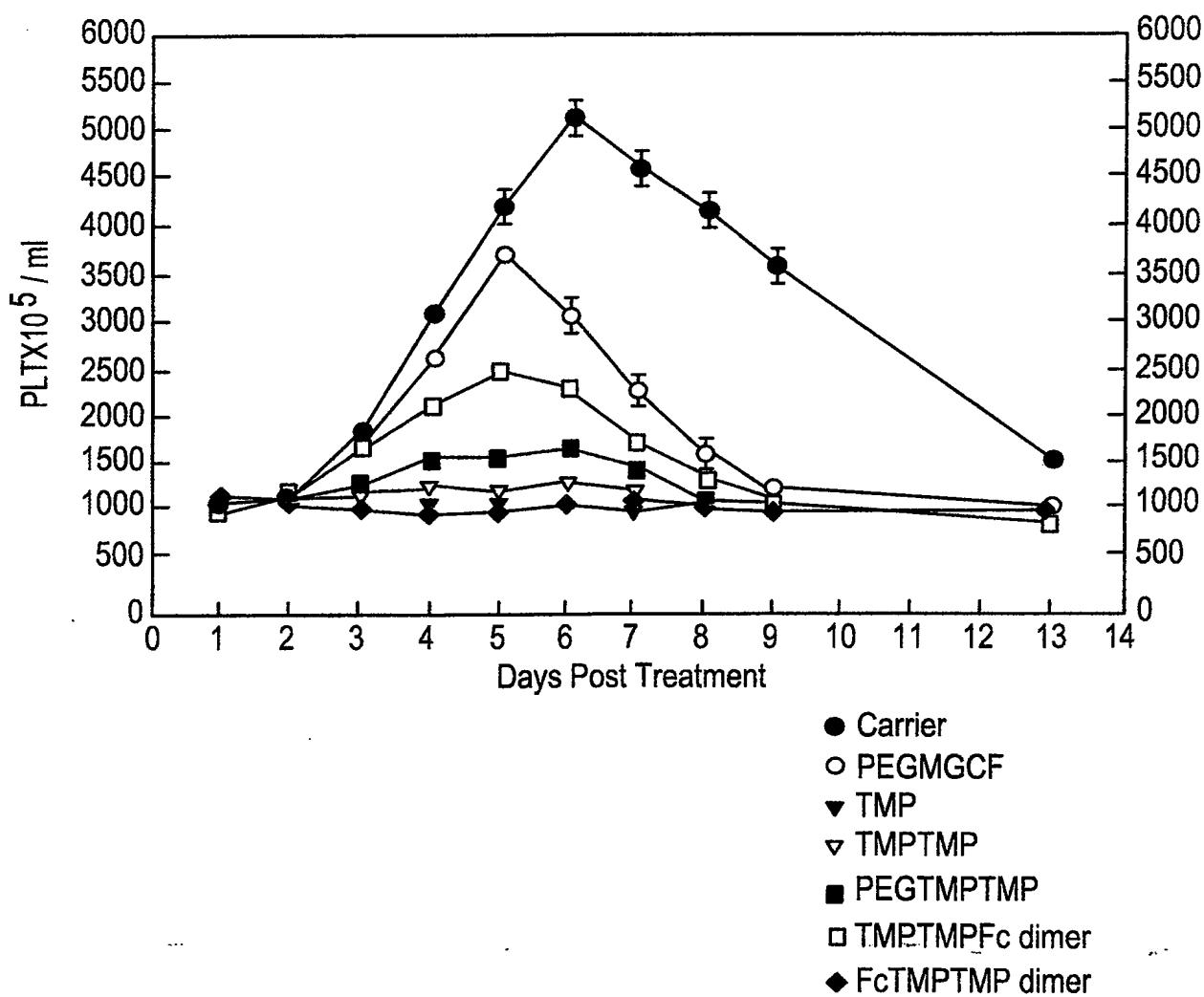


FIG.12

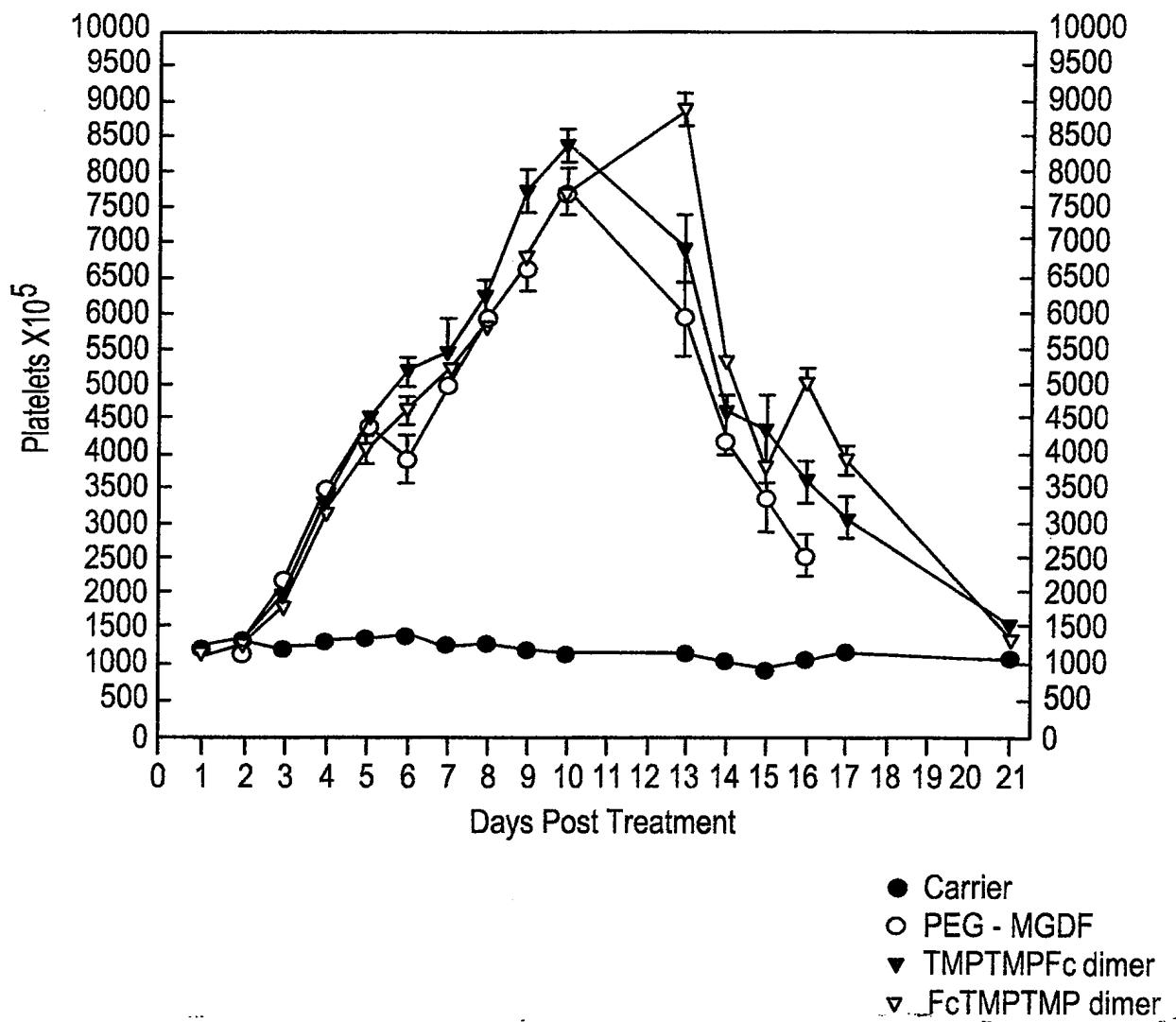


FIG. 13

XbaI

1 TCTAGATTGTTAACATTAAAGGAGGAATAACATATGGACAAAACACACATGTC
1 AGATCTAAACAAAATTGATTAATTCCCTCCTTATTGTATACCTGTTTGAGTGTGTACAG
1 M D K T H T C P -
1 CACCTTGTCCAGCTCCGAACTCCTGGGGGACCGTCAGTCCTCCTCTCCCCAAAAC
1 60
1 61 GTGGAACAGGTCGAGGCCCTGAGGACCCCCCTGGCAGTCAGAAGGAGAAGGGGGTTTG
1 P C P A P E L L G G P S V F L F P P K P -
1 120
1 121 CCAAGGACACCCCTCATGATCTCCGGACCCCTGAGGTACATGCGTGGTGGACGTGA
1 120
1 121 GTTCTGTGGAGTACTAGAGGGCTGGGACTCCAGTGTACGCACCACCTGCAC
1 K D T L M I S R T P E V T C V V V D V S -
1 180
1 181 GCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATG
1 180
1 181 CGGTCTCTGGGACTCCAGTTCAAGTTGACCATGCACCTGCCGCACCTCCACGTATTAC
1 H E D P E V K F N W Y V D G V E V H N A -
1 240
1 241 CCAAGACAAAGCCGGAGGAGCAGTACAACACGACGTACCGTGTGGTCAGCGTCCTCA
1 240
1 241 GTTCTGTTCGGCGCCCTCCTCGTCATGTTGTCATGGCACACCAGTCGAGGAGT
1 K T K P R E E Q Y N S T Y R V V S V L T -
1 300
1 301 CCGTCTGCACCAAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAG
1 300
1 301 GGCAGGACGTGGTCTGACCGACTTACCGTCTCATGTTCACGTTCCAGAGGTTGTTTC
1 V L H Q D W L N G K E Y K C K V S N K A -
1 360
1 361 CCCTCCCAGCCCCATCGAGAAAACCATCTCAAAGCCAAGGGCAGCCCCGAGAACAC
1 360
1 361 GGGAGGGTCGGGGTAGCTTTGGTAGGGTTTCGGTTCCCGTCGGGCTTTGGTG
1 L P A P I E K T I S K A K G Q P R E P Q -
1 420
1 421 AGGTGTACACCCCTGCCCATCCGGATGAGCTGACCAAGAACCAAGGTACGCTGACCT
1 420
1 421 TCCACATGTGGACGGGGTAGGGCCTACTCGACTGGTCTTGGTCCAGTCGGACTGGA
1 V Y T L P P S R D E L T K N Q V S L T C -
1 480
1 481 GCCTGGTCAAAGGTTCTATCCCAGCGACATGCCGTGGAGTGGAGAGCAATGGCAGC
1 480
1 481 CGGACCAAGTTCCGAAGATAGGGTCGCTGTAGCGGCACCTCACCCCTCGTACCCGTG
1 L V K G F Y P S D I A V E W E S N G Q P -
1 540
1 541 CGGAGAACAACTACAAGACCAACGCCCTCCCGTGGACTCCGACGGCTCTTCCCT
1 540
1 541 GCCTCTTGTGATGTTGGTGGAGGGCACCGACCTGAGGCTGCCGAGGAAGAAGGAGA
1 E N N Y K T T P P V L D S D G S F F L Y -
1 600
1 601 ACAGCAAGCTACCGTGGACAAGAGCAGGTGGAGCAGGGAACGTCTTCATGCTCG
1 600
1 601 TGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCTTGAGAAGAGTACGAGGC
1 S K L T V D K S R W Q Q G N V F S C S V -
1 660
1 661 TGATGCATGAGGCTCTGCACAACCACTACACGAGAAGACCTCTCCCTGTCTCCGGTA
1 660
1 661 ACTACGTACTCCGAGACGTGTTGGTATGTGCGTCTCTCGGAGAGGGACAGAGGCCAT
1 M H E A L H N H Y T Q K S L S L S P G K -
1 720
1 721 AAGGTGGAGGTGGTGGAGGTACTTACTCTGCCACTCGGCCCTGACTTGGGTTT
1 720
1 721 TTCCACCTCCACCAACCGACCTCCATGAATGAGAACGGTGAAGCCGGGACTGAACCCAA
1 G G G G G G T Y S C H F G P L T W V C -
1 780
1 781 GCAAACCGCAGGGTGGTTAATCTCGGATCC
1 781 CGTTGGCGCTCCACCAATTAGAGCACCTAGG
1 K P Q G G * 812

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FIG. 14

XbaI

1 TCTAGATTGTTAACTAATTAAAGGAGGAATAACATATGGGAGGTACTTACTCTGCC
1 AGATCTAACAAAATTGATTAATTCCCTTATTGTATACCCATGAATGAGAACGG
c M G G T Y S C H -

61 ACTTCGGCCCGCTGACTTGGGTATGTAAGCCACAAGGGGTGGGGAGGCGGGGGACA
61 TGAAGCCGGCGACTGAACCCATACATCGGTGTCCCCACCCCTCCGCCCCCTGT
c F G P L T W V C K P Q G G G G G G D K -

121 AAACTCACACATGTCCACCTGCCAGCACCTGAACCTGGGGGACCGTCAGTTCC
121 TTTGAGTGTGTACAGGTGGAACGGGTGGACTTGAGGACCCCCCTGGCAGTCAGG
c T H T C P P C P A P E L L G G P S V F L -

181 TCTTCCCCAAAACCAAGGACACCTCATGATCTCCGGACCCCTGAGGTACATGCG
181 AGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGGGCTGGGACTCCAGTGTACGC
c F P P K P K D T L M I S R T P E V T C V -

241 TGGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCG
241 ACCACCAACCTGCACTCGGTCTCTGGACTCCAGTTCAAGTGTACCATGCCGC
c V V D V S H E D P E V K F N W Y V D G V -

301 TGGAGGTGCATAATGCAAGACAAAGCCGGGAGGAGCAGTACAACAGCACGTACCGTG
301 ACCTCCACGTATTACGGTTCTGTTCGGCGCCCTCTCGTCATGTTGTCGTGCATGGCAC
c E V H N A K T K P R E E Q Y N S T Y R V -

361 TGGTCAGCGTCTCACCGTCTGCACCAGGACTGGCTGAATGCAAGGAGTACAAGTCA
361 ACCAGTCGCAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCTCATGTTCACGT
c V S V L T V L H Q D W L N G K E Y K C K -

421 AGGTCTCCAACAAAGCCCTCCAGCCCCATCGAGAAAACATCTCAAAGCAAAGGGC
421 TCCAGAGGTGTTGGGAGGGTCGGGGTAGCTTGGTAGAGGTTGGTTCGGTTCCCG
c V S N K A L P A P I E K T I S K A K G Q -

481 AGCCCCGAGAACACAGGTGTACACCCCTGCCGATGAGCTGACCAAGAAC
481 TCGGGGCTCTGGTGTCCACATGTGGGACGGGGTAGGGCCCTACTCGACTGGTTCTGG
c P R E P Q V Y T L P P S R D E L T K N Q -

541 AGGTCAAGCTGACCTGCCCTGGTCAAAGGCTCTATCCCAGCACATGCCGTGGAGTGG
541 TCCAGTCGGACTGGACGGACCAAGTTCCGAAGATAGGGTCCGTAGCGGCACCTCACCC
c V S L T C L V K G F Y P S D I A V E W E -

601 AGAGCAATGGCAGCCGGAGAACAACTACAAGACCAAGCCCTCCCGTGCTGGACTCCGAC
601 TCTCGTTACCCGTCGGCTTGTGATGTTCTGTCGGAGGGCACGACCTGAGGCTGC
c S N G Q P E N N Y K T T P P V L D S D G -

661 GCTCTTCTTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACG
661 CGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGCCACCGTCGTCCCTTGC
c S F F L Y S K L T V D K S R W Q Q G N V -

721 TCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCAACTACACGCAAGAGGCTCT
721 AGAAGAGTACGAGGCACACTACGTACTCCGAGACGTGTTGGTATGTCGTCTTCGGAGA
c F S C S V M H E A L H N Y T Q K S L S -

BamHI

781 CCCTGTCTCCGGTAAATAATGGATCC
781 GGGACAGAGGCCATTATACCTAGG
c L S P G K *

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FIG. 15

XbaI

1 TCTAGATTTGAGTTTAACCTTTAGAAGGAGGAATAAAATATGGGAGGTACTTACTCTTG
1 AGATCTAAACTCAAAATTGAAAATCTTCCTCCTTATTTATACCCCTCATGAATGAGAAC
b M G G T Y S C -

61 CCACTTCGGCCCCTGACTGACTGGGTTGCAAACCGCAGGGTGGCGGGCGGGCGGTGG
b GGTGAAGCCGGGTGACTGAACCCAAACGTTGGCTCCACCGCCGCCGCCACC
b H F G P L T W V C K P Q G G G G G G G G -

121 TACCTATTCCGTGATTTGGCCCGCTGACCTGGGTATGTAAGCCACAAGGGGGTGGGG
b ATGGATAAGGACAGTAAAACCGGGGACTGGACCCATACATCGGTGTTCCCCACCCCC
b T Y S C H F G P L T W V C K P Q G G G G -

181 AGGGGGGGGGGACAAAACACACATGTCCACCTGCCAGCACCTGAACCTCTGGGG
b TCCGCCCCCCCCCTGTTTGAGTGTGACAGGTGAAACGGGCTGTGGACTTGAGGACCCCC
b G G G D K T H T C P P C P A P E L L L G G -

241 ACCGTCAAGTTTCCCTCTCCCCCAAAACCAAGGACACCCCTCATGATCTCCGGACCCC
b TGGCAGTCAAAAGGAGAAGGGGGTTTCCGCTGTGGACTTGAGGACCCCC
b P S V F L F P P K P K D T L M I S R T P -

301 TGAGGTACATGGTGGTGGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTG
b ACTCCAGTGTACGCACCACCTGCACCTGGCTCTGGACTCCAGTTCAAGTTGAC
b E V T C V V V D V S H E D P E V K F N W -

361 GTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAA
b CATGCACCTGCCGCACCTCCACGTATTACGGTCTGTTCCGGCCCTCCTCGTCATGTT
b Y V D G V E V H N A K T K P R E E Q Y N -

421 CAGCACGTACCGTGTGGTCAGCGTCCCTCACCGTCTGCACCAGGACTGGCTGAATGGCAA
b GTCGTGCATGGCACACCAGTCGAGGAGTGGCAGGACGTGGCTCTGACCGACTTACCGTT
b S T Y R V V S V L T V L H Q D W L N G K -

481 GGAGTACAAGTCAAGGTCTCCAACAAAGCCCTCCAGCCCCCATCGAGAAAACCATCTC
b CCTCATGTTACGTTCCAGAGGTTTTCCGGAGGGTAGCTTTGGTAGAG
b E Y K C K V S N K A L P A P I E K T I S -

541 CAAAGCCAAAGGGCAGCCCCGAGAACCAACAGGTGTACACCCCTGCCCATCCGGATGA
b GTTTGGTTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACT
b K A K G Q P R E P Q V Y T L P P S R D E -

601 GCTGACCAAGAACCAAGGTGAGCCTGACCTGCCCTGGTAAAGGCTTCTATCCCAGCAGAT
b CGACTGGTCTGGTCCAGTCGACTGGACGGACCAGTTCCGAAGATAGGTGCTGTA
b L T K N Q V S L T C L V K G F Y P S D I -

661 CGCCGTGGAGTGGAGAGCAATGGGAGCCGGAGAACAACTACAAGAACCCACGCCCTCCCGT
b GCGGCACCTCACCTCTCGTACCCGTCGGCTCTGGTGTGATGTTCTGGTGGAGGGCA
b A V E W E S N G Q P E N N Y K T T P P V -

721 GCTGGACTCCGACGGCTCTTCTTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTG
b CGACCTGAGGCTGCCAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCAC
b L D S D G S F F L Y S K L T V D K S R W -

781 GCAGCAGGGAAACGTCTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACAC
b CGTCGTCCCCCTGCAAGAAGAGTACGAGGCACTACGTACTCCGAGACGTGTTGGTGTG
b Q Q G N V F S C S V M H E A L H N H Y T -

BamHI

841 GCAGAAGAGCCTCTCCCTGTCTCCGGTAAATAATGGATCC
b CGTCTTCTCGGAGAGGGACAGAGGCCATTATACCTAGG
b Q K S L S L S P G K *

FIG. 16

XbaI

1 TCTAGATTTGTTTAACATAATTAAAGGAGGAATAACATATGGACAAAACATCACACATGTC
1 AGATCTAACAAAATTGATTAATTCCCTTATTGTATACCTGTTTGAGTGTGTACAG
c M D K T H T C P -

61 CACCTTCCCCAGCACCTGAACCTCCTGGGGGACCGTCAGTTTCTCTTCCCCAAAAC
c 61 GTGGAACGGGTCGTGGACTTGAGGACCCCCCTGGCAGTCAAAAGGAGAACGGGGTTTG
c P C P A P E L L G G P S V F L F P P K P -

121 CCAAGGACACCCCTCATGATCTCCGGACCCCTGAGGTACATGCGTGGTGGTGGACGTGA
c 121 GTTCTGTGGAGTACTAGAGGGCTGGGACTCCAGTGTACGCACCACCTGCACT
c K D T L M I S R T P E V T C V V V D V S -

181 GCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATG
c 181 CGGTGCTCTGGGACTCCAGTTCAAGTTGACCATGCACCTGGCGACCTCACGTATTAC
c H E D P E V K F N W Y V D G V E V H N A -

241 CCAAGACAAAGCCGGGGAGGAGCAGTACAACACGACCGTACCGTGTGGTACGTCCCTCA
c 241 GGTCTGTCTGGCGCCCTCCCTCGTCATGTTGTCGTGCATGGCACACCAGTCGAGGAGT
c K T K P R E E Q Y N S T Y R V V S V L T -

301 CCGTCCTGCACCAGGACTGGCTGAATGGCAAGGAGTACAAGTCAAGGTCTCCAACAAAG
c 301 GGCAGGACGTGGCTCTGACCGACTTACCGTTCTCATGTTACGTTCCAGAGGTTGTTTC
c V L H Q D W L N G K E Y K C K V S N K A -

361 CCCCTCCCAGCCCCATCGAGAAACCATCTCAAAGCCAAGGGCAGCCCCGAGAACCCAC
c 361 GGGAGGGTCGGGGTAGCTTTGGTAGAGGTTGGTCCAGGGCTCTGGTG
c L P A P I E K T I S K A K G Q P R E P Q -

421 AGGTGTACACCCCTGCCTCCATCCGGATGAGCTGACCAAGAACCAAGGTACGCTGACCT
c 421 TCCACATGTGGGACGGAGGTAGGGCCCTACTCGACTGGTCTGGTCCAGTCGACTGGA
c V Y T L P P S R D E L T K N Q V S L T C -

481 GCCTGGTCAAAGGTTCTATCCCAGCGACATGCCGTGGAGTGGAGAGCAATGGCAGC
c 481 CGGACCAAGTTCGAAAGATAGGGTCGTGTAGCGGCACCTCACCCCTCGTTACCGTCG
c L V K G F Y P S D I A V E W E S N G Q P -

541 CGGAGAACAACTACAAGACCAACGCCCTCCGTGCTGGACTCCGACGGCTCCTCTTCT
c 541 GCCTCTTGTGATGTTGGTGCAGGGCAGACCTGAGGCTGCCAGGAAGAACGGAGA
c E N N Y K T T P P V L D S D G S F F L Y -

601 ACAGCAAGCTACCCGGACAAGAGCAGGTGGCAGCAGGGAACGTCTTCATGCTCCG
c 601 TGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTCGTCCCTTGAGAAGAGTACGAGGC
c S K L T V D K S R W Q Q G N V F S C S V -

661 TGATGCATGAGGCTCTGCACAACCACTACACGAGAAGAGCCTCTCCCTGTCTCCGGTA
c 661 ACTACGTACTCCGAGACGTGTTGGTGTAGTGTGCGTCTCTCGGAGAGGGACAGAGGCCAT
c M H E A L H N H Y T Q K S L S L S P G K -

721 AAGGTGGAGGTGGTGGCGAGGTACTTACTCTTGCACCTCGGCCACTGACTTGGTTT
c 721 TTCCACCTCCACCAACCGCCCTCATGAATGAGAACGGTGAAGCCGGTGACTGAACCCAAA
c G G G G G G T Y S C H F G P L T W V C -

781 GCAAACCGCAGGGTGGCGCCGGCGGGCGGTGACCTATTCTGTCAATTGGCCCG
c 781 CGTTTGGCGTCCCACCGCCCGCCGCCACCATGGATAAGGACAGTAAACCGGGCG
c K P Q G G G G G G G T Y S C H F G P L -

BamHI

841 TGACCTGGGTATGTAAGCCACAAGGGGTTAACATCGAGGATCC
c 841 ACTGGACCCATACATTGGTGTCCCCAATTAGAGCTCCTAGG
c T W V C K P Q G G *

FIG. 17A

[AatII sticky end]
(position #4358 in pAMG21)

5' GCGTAACGTATGCATGGTCTCC -
3' TGCACGCATTGCATACTGATTACAGAGG -

-CCATGCGAGAGTAGGAACTGCCAGGCATCAAATAAAACGAAAGGCTAGTCGAAAGACT -
-GGTACGCTCTCATCCCTGACGGTCCGTAGTTATTTGCTTCCGAGTCAGCTTCTGA -
-GGGCCTTCGTTATCTGTTGTCGGTGAACGCTCTCCTGAGTAGGACAAATCCGC -
-CCGGAAAGCAAAATAGACAACAAACAGCCACTGCGAGAGGACTCATCTGTTAGGCG -
-CGGGAGCGGATTGAAACGTTGCGAAGCAACGGCCGGAGGGTGGCGGGCAGGACGCCGC -
-GCCCTCGCCTAAACTTGCAACGCTCGTTGCCGGCCTCCACCGCCCGTCTGCGGGCG -
-CATAAAATGCCAGGCATCAAATTAAAGCAGAAGGCCATCCTGACGGATGCCCTTTTGCCT -
-GTATTTGACGGTCCGTAGTTAATCGTCTCCGGTAGGACTGCCAACCGGAAAAACGCA -

AatII

-TTCTACAAACTCTTGTATTTCTAAATACATTCAAATATGGACGTCGTACCTAAC -
-AAGATTTGAGAAAACAATAAAAGATTATGTAAGTTATACCTGCAGCATGAATTG -
-TTTTAAAGTATGGCAATCAATTGCTCCTGTTAAAATTGCTTAGAAATACTTGGCAGC -
-AAAATTCTACACCGTTAGTTAACGAGGACAATTAAACGAAATCTTATGAAACCGTCG -
-GGTTTGGTGTATTGAGTTTCATTGCGCATTGGTAAATGAAAGTGACCGTGCCTTAC -
-CCAAACAAACATAACTCAAAGTAAACCGTAACCAATTACCTTCACTGGCACGCGAATG -
-TACAGCCTAATATTTGAAATATCCAAGAGCTTTCCCTCGCATGCCACGCTAAC -
-ATGTCGGATTATAAAACTTATAGGGTCTCGAAAAAGGAAGCGTACGGGTGCGATTG -
-ATTCTTTCTTTGGTAAATCGTTGTTGATTTATTATTCGTATATTATTTTC -
-TAAGAAAAAGAGAAAACCAATTAGCAACAAACTAAATAAACGATAAAATAAAAG -
-GATAATTATCAACTAGAGAAGGAACAATTAAATGGTATGTCATACACGCATGAAAAATA -
-CTATTAATAGTTGATCTTCCCTGTTAATTACCATACAAGTATGCGTACATTTCAT -
-AACTATCTATATAGTTGCTTCTGAATGTGAAAACCTAACGATTCCGAAGCCATTAT -
-TTGATAGATATCAACAGAAAGAGACTTACACGTTGATTGTAAGGCTTCGGTAATA -
-TAGCAGTATGAATAGGAAACTAAACCCAGTGATAAGACCTGATGATTCGCTTAA -
-ATCGTCATACTTATCCCTTGATTGGTCACTATTCTGGACTACTAAAGCGAAGAAATT -
-TTACATTGGAGATTTTATTTACAGCATTGTTTCAAATATATTCAATTATCGGTG -
-AATGTAACCTCTAAAAATAATGCGTAACAAAGTTATATAAGGTTAATTAGCCAC -
-AATGATTGGAGTTAGAATAATCTACTATAGGATCATATTAAATTAGCGTCATCAT -
-TTACTAACCTCAATCTTATTAGATGATATCCTAGTATAAAATAATTGCACTAGTA -
-AATATTGCCATTAGGTAATTATCCAGAAATTGAAATATCAGATTAAACCCTAG -
-TTATAACGGAGGTAAAAATCCCATTAAATAGGTCTTAACTTATAGTCTAAATTGGTATC -
-AATGAGGATAATGATCGCGAGTAAATAATATTCAACATGTACCATTTAGTCATATCAG -
-TTACTCCTATTACTAGCGCTCATTATTAAAGTGTACATGGTAAATCAGTATAGTC -
-ATAAGCATTGATTAATATCATTATTGCTCTACAGGCTTAAATTAAATTATCTGT -
-TATTCGTAACTAATTATAGTAATAACGAAGATGTCCGAAATTAAATAATTAAAGACA -
-AAGTGTGTCGGCATTATGTCCTTCATACCCATCTCTTATCCTTACCTATTGTTGTC -
-TTCACAGCAGCGTAAATACAGAAAGTATGGTAGAGAAATAGGAATGGATAACAAACAG -
-GCAAGTTTGCCTGTTATATATCATTAAACGGTAATAGATTGACATTGATTCTAATAA -
-CGTTCAAAACGACAATATAGTAATTGCCATTATCTAACTGTAAACTAAGATTATT -

FIG. 17B

- ATTGGATTTGTCACACTATTATATCGCTTGAAATACAATTGTTAACATAAGTACCTG -
- TAACCTAAAAACAGTGTGATAATATAGCGAACTTATGTTAACAAATTGTATTCATGGAC -
- TAGGATCGTACAGGTTACGCAAGAAAATGGTTAGTCGATTAATCGATTGATT -
- ATCCTAGCATGTCCAAATGCGTCTTTACCAAACAATATCAGCTAATTAGCTAAACTAA -
- CTAGATTGTTTAACTAATTAAAGGAGGAATAACATATGGTTAACGCGTGGATTGCA -
- GATCTAAACAAAATTGATTAATTCCCTCCTATTGTATACCAATTGCGAACCTTAAGCT -

SacII
- GCTCACTAGTGTGACCTGCAGGGTACCATGGAAGCTTACTCGAGGATCCGCGGAAAGAA -
- CGAGTGATCACAGCTGGACGTCCCAGGTACCTCGAATGAGCTCCTAGGCGCCTTCTT -
- GAAGAAGAAGAAGAAAGCCCAGAAAGGAAGCTGAGTTGGCTGCTGCCACCGCTGAGCAATA -
- CTTCTTCTTCTTCGGGCTTCCTCGACTCAACCGACGACGGTGGCGACTCGTTAT -
- ACTAGCATAACCCCTGGGCCTCTAACGGGTCTTGAGGGTTTTGCTGAAAGGAGG -
- TGATCGTATTGGGAACCCGGAGATTGCCAGAACTCCCCAAAAACGACTTCCTCC -
- AACCGCTCTCACGCTTACGC 3' [SacII sticky end]
- TTGGCGAGAAGTGCAGAAGTG 5' (position #5904 in pAMG21)

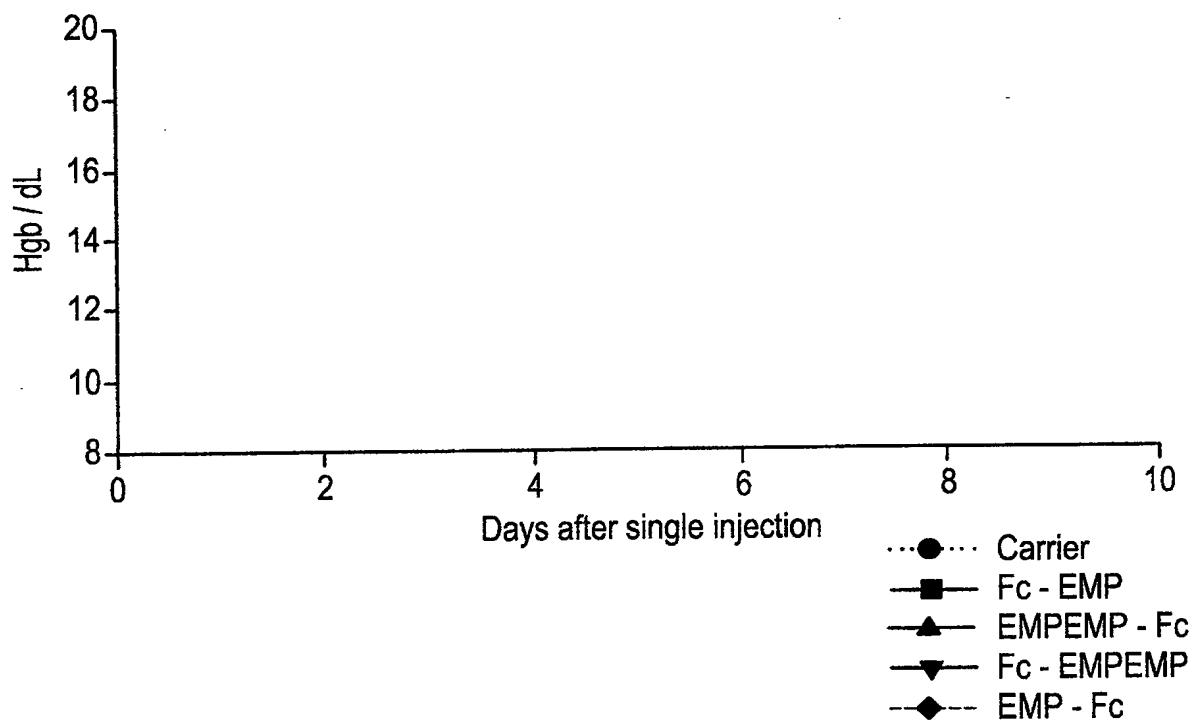
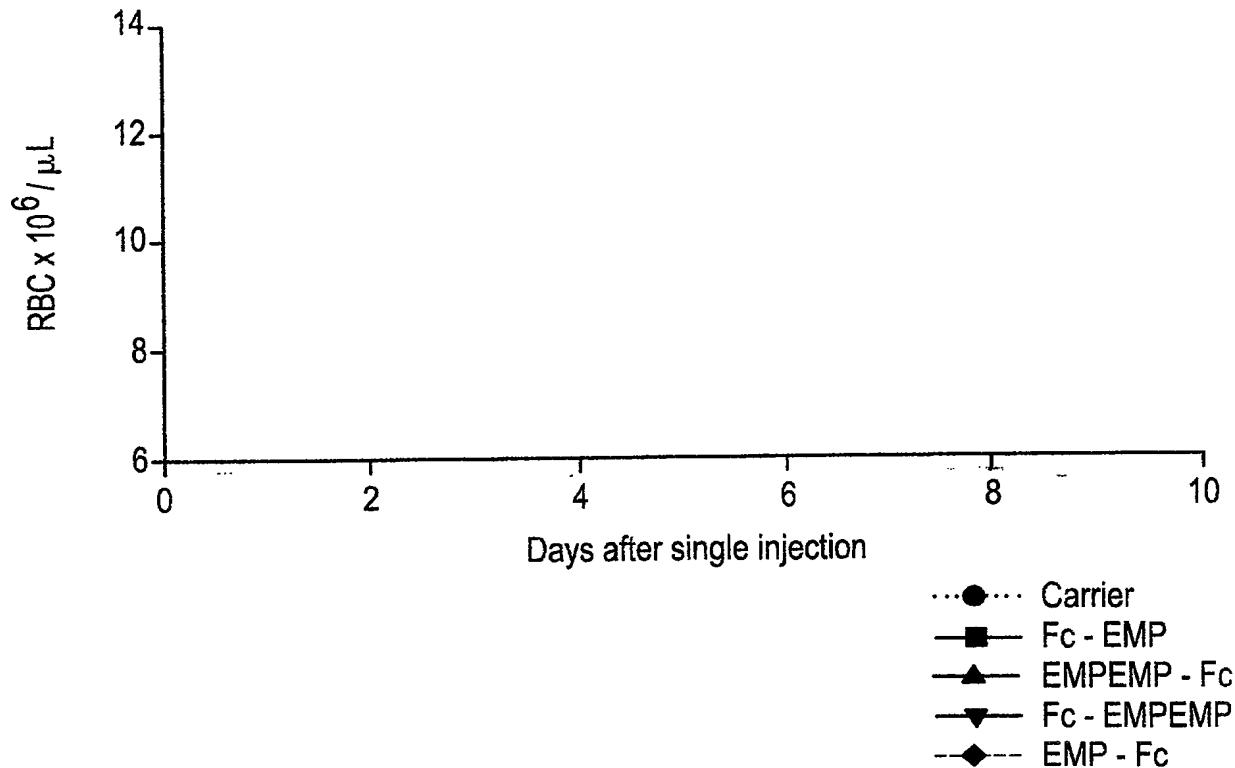
FIG.18A - 1**FIG.18A - 2**

FIG.18A - 3

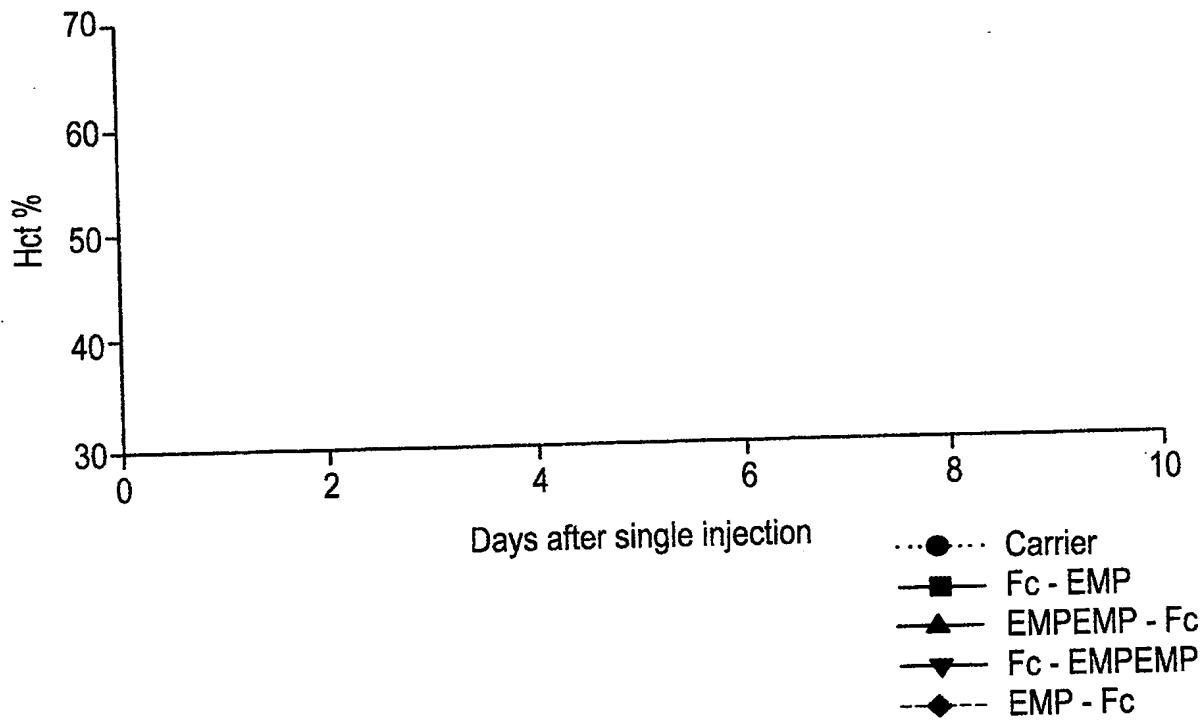


FIG.18B - 1

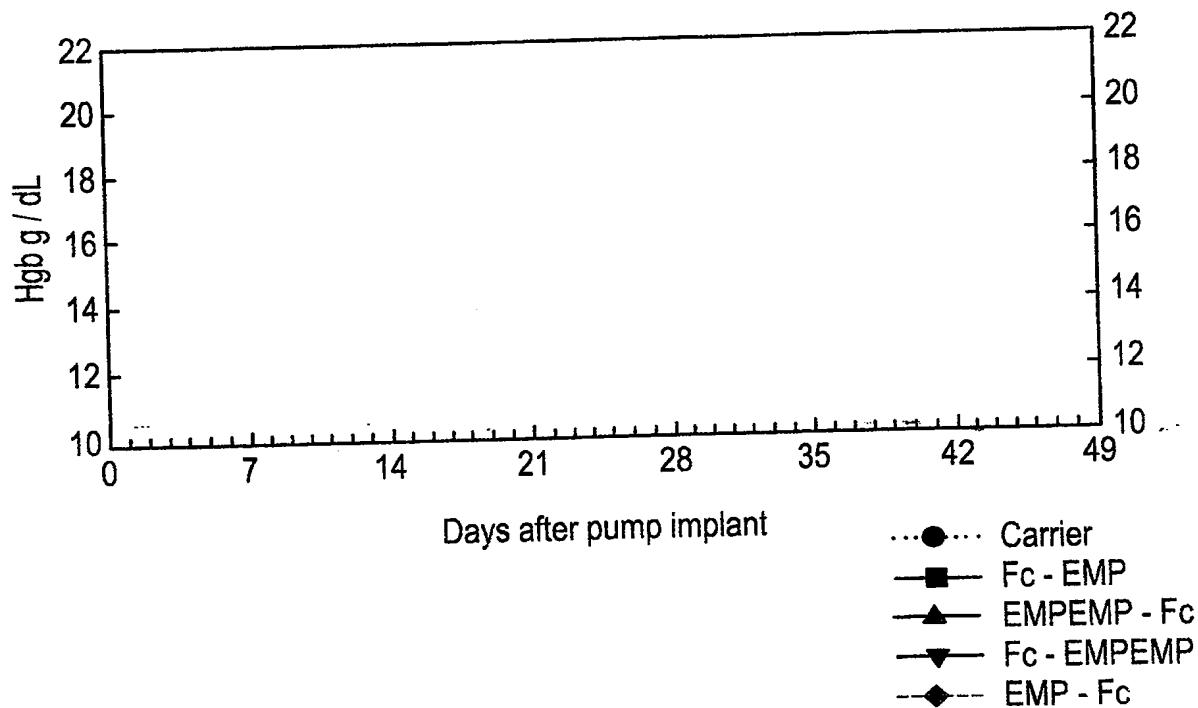


FIG.18B - 2

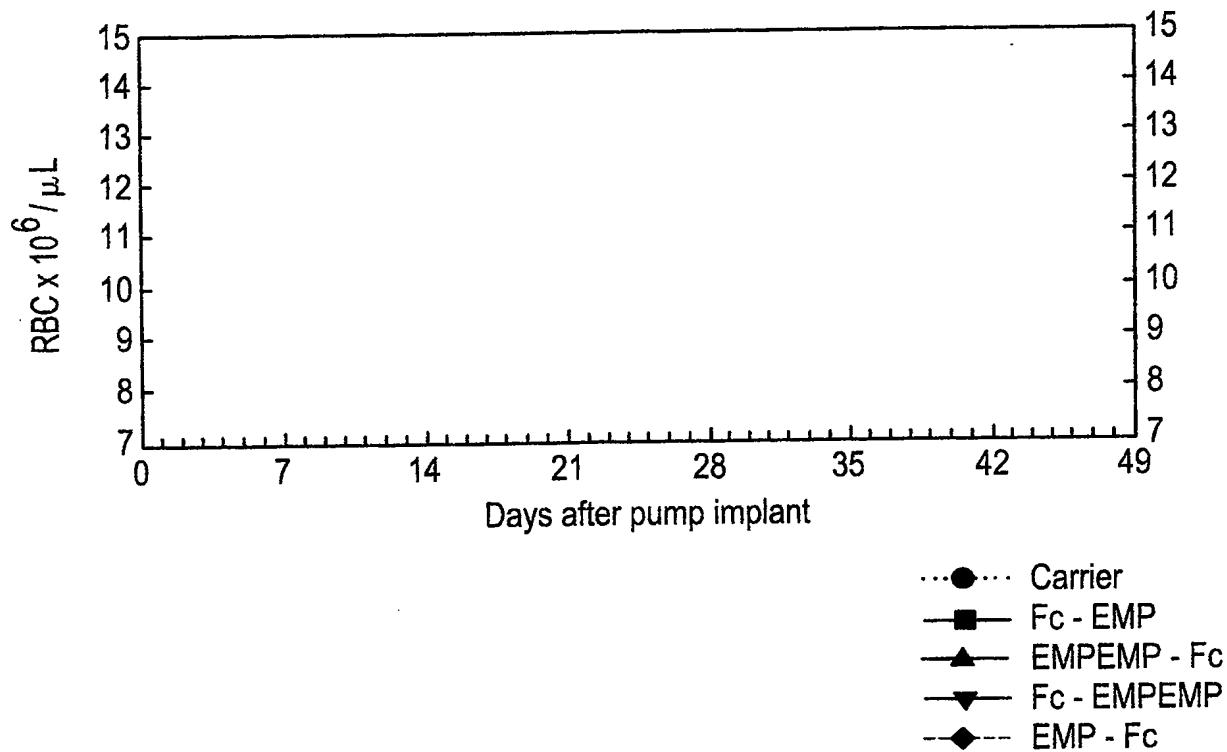


FIG.18B - 3

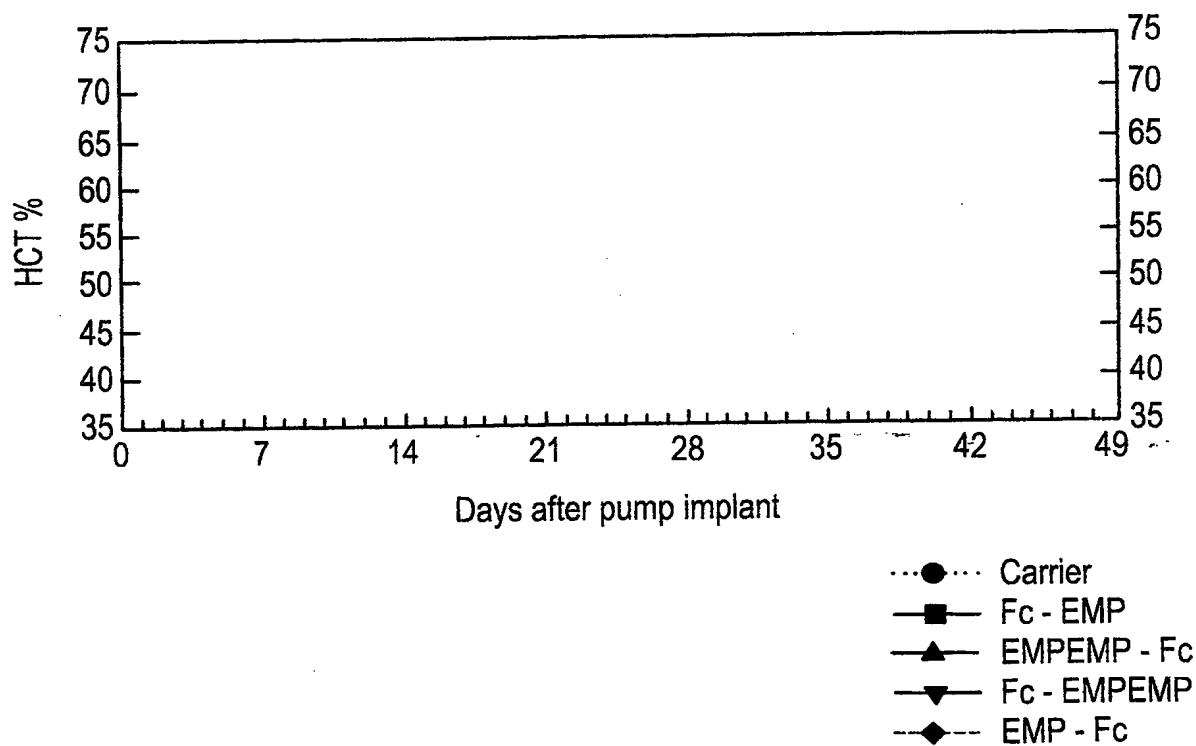


FIG. 19A

NdeI

1 CATATGGACAAAACCTCACACATGTCCACCTTGTCCAGCTCCGGAACCTCCTGGGGGACCG 60
 1 GTATAACCTGTTTGAATGTGTACAGGTGGAACAGGTCGAGGCCTTGAGGACCCCCCTGGC

a M D K T H T C P P C P A P E L L G G P -
 61 TCAGTCTTCCTCTCCCCCAAAACCCAAGGACACCCCTCATGATCTCCGGACCCCTGAG 120
 61 AGTCAGAAGGAGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGGCCTGGGACTC

a S V F L F P P K P K D T L M I S R T P E -
 121 GTCACATGCGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC 180
 121 CAGTGTACGCACCACCTGCACTCGGTGCTCTGGGACTCCAGTTCAAGTTGACCATG

a V T C V V V D V S H E D P E V K F N W Y -
 181 GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGGGGAGGAGCAGTACAACAGC 240
 181 CACCTGCCGCACCTCCACGTATTACGGTTCTGGCGCCCTCTCGTCATGTTGTCG

a V D G V E V H N A K T K P R E E Q Y N S -
 241 ACGTACCGTGTGGTCAGCGTCCTCACCGTCTGCACCAAGGACTGGCTGAATGGCAAGGAG 300
 241 TGCATGGCACACCAGTCGCAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCTC

a T Y R V V S V L T V L H Q D W L N G K E -
 301 TACAAGTCAAGGTCTCCAACAAAGCCCTCCCAGCCCCATCGAGAAAACATCTCCAAA 360
 301 ATGTTCACGTTCCAGAGGTTCTGGGAGGGTAGCTTTGGTAGAGGTT

a Y K C K V S N K A L P A P I E K T I S K -
 361 GCCAAAGGGCAGCCCCGAGAACCAACAGGTGTACACCCCTGCCCCATCCCAGGATGAGCTG 420
 361 CGGTTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCACTCGAC

a A K G Q P R E P Q V Y T L P P S R D E L -
 421 ACCAAGAACCAAGGTCAAGCCTGACCTGCCTGGTCAAAGGTTCTATCCCAGGACATCGCC 480
 421 TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGGTCGCTGTAGCGG

a T K N Q V S L T C L V K G F Y P S D I A -
 481 GTGGAGTGGGAGAGCAATGGCAGCCGGAGAACAACTACAAGACCACGCCCTCCGTGCTG 540
 481 CACCTCACCCCTCGTTACCCGTGGCCTCTGGTGTGATGTTCTGGTGGAGGGCACGAC

a V E W E S N G Q P E N N Y K T T P P V L -
 541 GACTCCGACGGCTCCTCTTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAG 600
 541 CTGAGGCTGCCAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC

a D S D G S F F L Y S K L T V D K S R W Q -

FIG. 19B

CAGGGGAACGTCTTCTCATGCTCCGTATGCATGAGGCTCTGCACAAACCACTACACGCAG
601 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
GTCCCCCTTGCAGAAGAGTACGAGGCACACTACGTACTCCGAGACGTGTTGGTATGTGCGTC

a Q G N V F S C S V M H E A L H N H Y T Q -

AAGAGCCTCTCCCTGTCTCCGGTAAAGGTGGAGGTGGTGGTGAATTCCCTGCCGCACTAC
661 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 720
TTCTCGGAGAGGGACAGAGGCCATTCCACCTCCACCACCACTGAAGGACGGCGTGATG

a K S L S L S P G K G G G G G D F L P H Y -

BamHI
|
AAAAACACCTCTGGGTACCGTCCGTAAATGGATCC
721 -----+-----+-----+-----+-----+-----+-----+-----+ 757
TTTTTGTGGAGAGACCCAGTGGCAGGCATTACCTAGG

a K N T S L G H R P *

FIG. 20A

NdeI

1 CATATGGACTTCCTGCCGCACTACAAAAACACCTCTGGTCACCGTCCGGTGGAGGC
 1 GTATAACCTGAAGGACGGCGTGTATGTTTGTGGAGAGACCCAGTGGCAGGCCACCTCCG 60

a M D F L P H Y K N T S L G H R P G G G -

61 GGTGGGGACAAAACACTCACACATGTCCACCTTGCAGCACCTGAACCTGGGGGGACCG
 61 CCACCCCTGTTTGAGTGTGTACAGGTGGAACGGGTGGACTTGAGGACCCCCCTGGC 120

a G G D K T H T C P P C P A P E L L G G P -

121 TCAGTTTCCTCTTCCCCCAAAACCCAAGGACACCCCTCATGATCTCCGGACCCCTGAG
 121 AGTCAAAAGGAGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGGGCCTGGGACTC 180

a S V F L F P P K P K D T L M I S R T P E -

181 GTCACATGCGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC
 181 CAGTGTACGCACCACCACTGCACCTCGGTGCTCTGGACTCCAGTTCAAGTTGACCATG 240

a V T C V V V D V S H E D P E V K F N W Y -

241 GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGC
 241 CACCTGCCGCACCTCCACGTATTACGGTCTGTTGGCCCTCCTCGTCATGTTGTGCG 300

a V D G V E V H N A K T K P R E E Q Y N S -

301 ACGTACCGTGTGGTCAGCGTCTCACCGTCTGCACCAGGACTGGCTGAATGGCAAGGAG
 301 TGCACTGGCACACCACTCGCAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCCCTC 360

a T Y R V V S V L T V L H Q D W L N G K E -

361 TACAAGTCAAGGTCTCCAACAAAGCCCTCCAGCCCCATCGAGAAAACCATCTCCAAA
 361 ATGTTCACGTTCCAGAGGTGTTGGGAGGGTCGGGGTAGCTCTTGGTAGAGGTT 420

a Y K C K V S N K A L P A P I E K T I S K -

421 GCCAAAGGGCAGCCCCGAGAACCAACAGGTGTACACCCCTGCCCATCCGGATGAGCTG
 421 CGGTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGAC 480

a A K G Q P R E P Q V Y T L P P S R D E L -

481 ACCAAGAACCAAGGTCAAGCTGACCTGCCTGGTCAGGCTTCTATCCCAGCGACATCGCC
 481 TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGGTCGCTGTAGCGG 540

a T K N Q V S L T C L V K G F Y P S D I A -

541 GTGGAGTGGGAGAGCAATGGGAGCCGGAGAACAACTACAAGACCAACGCCCTCCGTGCTG
 541 CACCTCACCCCTCGTTACCCGTGGCCTTGTGATGTTCTGGTGGAGGGCACGAC 600

a V E W E S N G Q P E N N Y K T T P P V L -

FIG. 20B

601 GACTCCGACGGCTCCTTCTTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAG 660
CTGAGGCTGCCGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC

a D S D G S F F L Y S K L T V D K S R W Q -

661 CAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAG 720
GTCCCCCTTGCAGAAGAGTACGAGGCACACTACGTACTCCGAGACGTGTTGGTATGTGCGTC

a Q G N V F S C S V M H E A L H N H Y T Q -

721 AAGAGCCTCTCCCTGTCTCCGGTAAATAATGGATCCGGCGG 761
TTCTCGGAGAGGGACAGAGGCCATTATTACCTAGGCGCC

a K S L S L S P G K *

BamHI
|

FIG. 21A

NdeI

```

1  CATATGGACAAAACACACATGTCCACCTTGTCCAGCTCCGAACTCCTGGGGGACCG 60
1  GTATACCTGTTTGAGTGTACAGGTGGAACAGGTCGAGGCCTGAGGACCCCCCTGGC

a   M D K T H T C P P C P A P E L L G G P -
61  TCAGTCTCCTCTCCCCAAAACCAAGGACACCCCTCATGATCTCCGGACCCCTGAG 120
61  AGTCAGAAGGAGAAGGGGGTTTGGGTCCTGTGGAGTACTAGAGGGCCTGGGACTC

a   S V F L F P P K P K D T L M I S R T P E -
121  GTCACATGCGTGGTGGTGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC 180
121  CAGTGTACGCACCACCACTGCACTCGGTGCTCTGGACTCCAGTTCAAGTTGACCATG

a   V T C V V V D V S H E D P E V K F N W Y -
181  GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAGCCCGGGAGGAGCAGTACAACAGC 240
181  CACCTGCCGACCTCCACGTATTACGGTTCTGTTCGGGCCCTCCTCGTCATGTTGTCG

a   V D G V E V H N A K T K P R E E Q Y N S -
241  ACGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAAGGACTGGCTGAATGGCAAGGAG 300
241  TGCATGGCACACCAGTCGAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCCCTC

a   T Y R V V S V L T V L H Q D W L N G K E -
301  TACAAGTGCAGGTCTCCAACAAAGCCCTCCAGCCCCATCGAGAAAACCATCTCCAAA 360
301  ATGTTCACGTTCCAGAGGTTGTTGGGAGGGTAGCTCTTGGTAGAGGTTT

a   Y K C K V S N K A L P A P I E K T I S K -
361  GCCAAAGGGCAGCCCCGAGAACCAAGGTGTACACCCCTGCCCATCCGGATGAGCTG 420
361  CGGTTCCCGTGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGAC

a   A K G Q P R E P Q V Y T L P P S R D E L -
421  ACCAAGAACCAAGGTCAAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCC 480
421  TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGTCGCTGTAGCGG

a   T K N Q V S L T C L V K G F Y P S D I A -
481  GTGGAGTGGGAGAGCAATGGGCAGCCGGAGAACAACTACAAGACCAAGCCTCCGTGCTG 540
481  CACCTCACCCCTCGTTACCGTCGGCCTTGTGATGTTCTGGTGCAGGGCAGCACGAC

a   V E W E S N G Q P E N N Y K T T P P V L -
541  GACTCCGACGGCTCCTTCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAG 600
541  CTGAGGCTGCCGAGGAAGAAGGAGATGCGTGCAGTGGCACCTGTTCTCGTCCACCGTC

a   D S D G S F F L Y S K L T V D K S R W Q -

```

FIG. 21B

601 CAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAG 660
GTCCCCCTTGCAGAAGAGTACGAGGCACTACGTACTCCGAGACGTGTTGGTATGTGCGTC
a Q G N V F S C S V M H E A L H N H Y T Q -
661 AAGAGCCTCTCCCTGTCTCCGGTAAAGGTGGAGGTGGTGGTTCGAATGGACCCGGGT 720
TTCTCGGAGAGGGACAGAGGCCATTCCACCTCCACCACCAAAGCTTACCTGGGCCA
a K S L S L S P G K G G G G G F E W T P G -
721 TACTGGCAGCCGTACGCTCTGCCGCTGTAATGGATCCCTCGAG 763
ATGACCGTCGGCATGCGAGACGGCAGATTACCTAGGGAGCTC
a Y W Q P Y A L P L *

BamHI

FIG. 22A

NdeI

1 CATATGTTGAATGGACCCGGGTTACTGGCAGCCGTACGCTCTGCCGCTGGGTGGAGGC
 60
 1 GTATAACAAGCTTACCTGGGGCCCAATGACCGTCGGCATGCGAGACGGCGACCCACCTCCG

a M F E W T P G Y W Q P Y A L P L G G G -
 61 GGTGGGGACAAAACACACATGTCCACCTTGCCAGCACCTGAACCTCCTGGGGGGACCG
 120
 61 CCACCCCTGTTTGAGTGTACAGGTGGAACGGGCGTGGACTTGAGGACCCCCCTGGC

a G G D K T H T C P P C P A P E L L G G P -
 121 TCAGTTTCCTCTCCCCAAAACCCAAGGACACCCCATGATCTCCGGACCCCTGAG
 180
 121 AGTCAAAAGGAGAAGGGGGGTTTGGGTTCTGTGGGAGTACTAGAGGGCCTGGGACTC

a S V F L F P P K P K D T L M I S R T P E -
 181 GTCACATGCGTGGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC
 240
 181 CAGTGTACGCACCACCACTGCACACTGGTCTCTGGACTCCAGTTCAAGTTGACCATG

a V T C V V V D V S H E D P E V K F N W Y -
 241 GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGGGGAGGAGCAGTACAACAGC
 300
 241 CACCTGCCGCACCTCCACGTATTACGGTCTGTTGGCCCTCTCGTCATGTTGTCG

a V D G V E V H N A K T K P R E E Q Y N S -
 301 ACGTACCGTGTGGTCAGCGCCTCACCGTCTGCACCAAGGACTGGCTGAATGGCAAGGAG
 360
 301 TGCAATGGCACACCAAGTCGCAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCTC

a T Y R V V S V L T V L H Q D W L N G K E -
 361 TACAAGTCAAGGTCTCCAACAAAGCCCTCCCAGCCCCATCGAGAAAACCATCTCCAAA
 420
 361 ATGTTCACGTTCCAGAGGTTGTTGGGAGGGCTGGGTAGCTCTTTGGTAGAGGTTT

a Y K C K V S N K A L P A P I E K T I S K -
 421 GCCAAAGGGCAGCCCCGAGAACCAACAGGTGTACACCCATCCGGGATGAGCTG
 480
 421 CGGTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGAC

a A K G Q P R E P Q V Y T L P P S R D E L -
 481 ACCAAGAACCAAGGTCAAGCTGACCTGCCTGGTCAAAGGCTTCTATCCAGCGACATGCC
 540
 481 TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAAGGTCGCTGTAGCGG

a T K N Q V S L T C L V K G F Y P S D I A -
 541 GTGGAGTGGGAGAGCAATGGGAGCCGGAGAACAAACTACAAGACCAACGCCCTCCGTGCTG
 600
 541 CACCTCACCCCTCTCGTTACCGTCGGCTCTGTTGATGTTCTGGTGCAGGGCACGAC

a V E W E S N G Q P E N N Y K T T P P V L -

FIG. 22B

601 GACTCCGACGGCTCCTCTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAG 660
CTGAGGCTGCCGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC

a D S D G S F F L Y S K L T V D K S R W Q -

661 CAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAG 720
GTCCCCCTTGCAGAAGAGTACGAGGCACACTACGTACTCCGAGACGTGTTGGTATGTGCCGTC

a Q G N V F S C S V M H E A L H N H Y T Q -

BamHI

721 AAGAGCCTCTCCCTGTCTCCGGTAAATAATGGATCC 757
TTCTCGGAGAGGGACAGAGGCCATTATTACCTAGG

a K S L S L S P G K *

FIG. 23A

NdeI

1 CATATGGACAAAACATCACACATGTCCACCGTGCCAGCACCTGAACCTCCTGGGGGGACCG
60 GTATACCTGTTTGAGTGTACAGGTGGCACGGGCGTGGACTTGAGGACCCCCCTGGC

a M D K T H T C P P C P A P E L L G G P -
61 TCAGTTTCTCTCCCCAAAACCCAAGGACACCCCATGATCTCCGGACCCCTGAG
120 AGTCAAAAGGAGAAGGGGGTTTGGGTCCTGTGGAGTACTAGAGGCCTGGGACTC

a S V F L F P P K P K D T L M I S R T P E -
121 GTCACATGCGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC
180 CAGTGTACGCACCACCACTGCACCGTGCCTCTGGACTCCAGTTCAAGTTGACCATG

a V T C V V V D V S H E D P E V K F N W Y -
181 GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGGGGAGGAGCAGTACAACAGC
240 CACCTGCCGCACCTCCACGTATTACGGTCTGTTCGGCCCTCGTCATGTTGTCG

a V D G V E V H N A K T K P R E E Q Y N S -
241 ACGTACCGTGTGGTCAGCGTCCTCACCGTCTGCACCAGGACTGGCTGAATGGCAAGGAG
300 TGCATGGCACACCAGTCGCAAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCC

a T Y R V V S V L T V L H Q D W L N G K E -
301 TACAAGTGCAGGTCTCCAACAAAGCCCTCCAGCCCCATCGAGAAAACCATCTCCAAA
360 ATGTTCACGTTCCAGAGGTTGTTGGGAGGGTAGCTTTGGTAGAGGTT

a Y K C K V S N K A L P A P I E K T I S K -
361 GCCAAAGGGCAGCCCCGAGAACACAGGTGTACACCCATCCGGGATGAGCTG
420 CGGTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGAC

a A K G Q P R E P Q V Y T L P P S R D E L -
421 ACCAAGAACCGAGTCAGCCTGACCTGCCTGGTCAAAGGCTCTATCCCAGCGACATGCC
480 TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGGTCGCTGTAGCGG

a T K N Q V S L T C L V K G F Y P S D I A -
481 GTGGAGTGGGAGAGCAATGGCAGCCGGAGAACAACTACAAGACCACGCCCTCCGTGCTG
540 CACCTCACCCCTCGTTACCGTCGGCCTTGTGATGTTCTGGTGCAGGGCACGAC

a V E W E S N G Q P E N N Y K T T P P V L -
541 GACTCCGACGGCTCCTTCTTCTACAGCAAGCTACCGTGGACAAGAGCAGGTGGCAG
600 CTGAGGCTGCCGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC

a D S D G S F F L Y S K L T V D K S R W Q -

FIG. 23B

601 CAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAG
660 GTCCCCCTTGCAGAAGAGTACGAGGCACTACGTACTCCGAGACGTGTTGGTATGTGCGTC

a Q G N V F S C S V M H E A L H N H Y T Q -

661 AAGAGCCTCTCCCTGTCTCCGGTAAAGGTGGTGGTGGTGGTGAACCGAACTGTGAC
720 TTCTCGGAGAGGGACAGAGGCCATTCCACCACCAACCACAACTGGCTTGACACTG

a K S L S L S P G K G G G G G V E P N C D -

BamHI

721 ATCCATGTTATGTGGGAATGGGAATGTTTGAAACGTCTGTAACCTCGAGGATCC
773 TAGGTACAATACACCCTTACCCCTAACAAACTTGCAGACATTGAGCTCCTAGG

a I H V M W E W E C F E R L *

FIG. 24A

NdeI

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  |  

CATATGGTTAACCGAACGTGACATCCATGTTATGTGGGAATGGGAATGTTTGAACGT  

1  -----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
GTATACCAACTTGGCTTGACACTGTAGGTACAATACACCCCTACCCCTACAAAACCTGCA

a      M V E P N C D I H V M W E W E C F E R -  

CTGGGTGGTGGTGGTGGTGGACAAAACACTCACACATGTCCACCGTCCCCAGCACCTGAACTC  

61  -----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
GACCCACCACCACCACTGTTGAGTGTACAGGTGGCACGGTCGGACTTGAG

a      L G G G G G D K T H T C P P C P A P E L -  

CTGGGGGGACCGTCAGTTTCCCTTCCCCAAAACCCAAGGACACCCCTCATGATCTCC  

121 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
GACCCCCCTGGCAGTCAAAAGGAGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGG

a      L G G P S V F L F P P K P K D T L M I S -  

CGGACCCCTGAGGTACATGCGTGGTGGACGTGAGCCACGAAGACCCCTGAGGTCAAG  

181 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
GCCTGGGACTCCAGTGTACGCACCACCTGCACTCGTGCTCTGGACTCCAGTTC

a      R T P E V T C V V V D V S H E D P E V K -  

TTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGGAGGAG  

241 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
AAGTTGACCATGCACCTGCCGCACCTCACGTATTACGGTTCTGGCGCCCTCCTC

a      F N W Y V D G V E V H N A K T K P R E E -  

CACTACAACAGCACGTACCGTGTGGTCAGCGTCCTCACCGTCTGCACCAAGGACTGGCTG  

301 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
GTCATGTTGTCGTGCATGGCACACCAGTCGCAGGAGTGGCAGGACGTGGCTGACCGAC

a      Q Y N S T Y R V V S V L T V L H Q D W L -  

AATGGCAAGGAGTACAAGTGCAGGTCTCAACAAAGCCCTCCCAGCCCCATCGAGAAA  

361 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
TTACCGTTCCATGTTCACGTTCCAGAGGTTGGGGAGGGTCGGGGTAGCTCTT

a      N G K E Y K C K V S N K A L P A P I E K -  

ACCATCTCAAAGCAAAGGGCAGCCCCGAGAACACAGGTGTACACCCCTGCCCATCC  

421 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
TGGTAGAGGTTTCGGTTCCCGTCGGGCTCTGGTGTCCACATGTGGACGGGGTAGG

a      T I S K A K G Q P R E P Q V Y T L P P S -  

CGGGATGAGCTGACCAAGAACCAAGGTCAAGCTGACCTGCCTGGTCAAAGGCTTCTATCCC  

481 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
GCCCTACTCGACTGGTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGG

a      R D E L T K N Q V S L T C L V K G F Y P -  

AGCGACATGCCGTGGAGTGGAGAGCAATGGCAGCCGGAGAACAACTACAAGACCAAG  

541 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
TCGCTGTAGCGGCACCTCACCCCTCGTTACCCGTGGCCTCTGGTGTGTTCTGGTGC

a      S D I A V E W E S N G Q P E N N Y K T T -
```

FIG. 24B

601 CCTCCCGTGTGGACTCCGACGGCTCCTCTTCCTCTACAGCAAGCTCACCGTGGACAAG 660
GGAGGGCACGACCTGAGGCTGCCGAGGAAGAAGGAGATGTCGTTCGAGTGGCACCTGTT
a P P V L D S D G S F F L Y S K L T V D K -
661 AGCAGGTGGCAGCAGGGAAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAAC 720
TCGTCCACCGTCGTCCCCCTGCAGAAGAGTACGAGGCACTACGTACTCCGAGACGTGTTG
a S R W Q Q G N V F S C S V M H E A L H N -
BamHI
721 CACTACACGCAGAAGAGCCTCTCCCTGTCTCCGGGTAAATAACTCGAGGATCC 773
GTGATGTGCGTCTCTCGGAGAGGGACAGAGGCCATTATTGAGCTCCTAGG
a H Y T Q K S L S L S P G K *

FIG. 25A

NdeI

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CATATGGACAAAACACACATGTCCACCTTGTCCAGCTCCGAACTCCTGGGGGACCG
1  -----+-----+-----+-----+-----+-----+-----+-----+-----+ 60
GTATACCTGTTTGAGTGTACAGGTGGAACAGGTGAGGCCTTGAGGACCCCCCTGGC

a M D K T H T C P P C P A P E L L G G P -
TCAGTCTCCTCTTCCCCAAAACCCAAGGACACCTCATGATCTCCGGACCCCTGAG
61  -----+-----+-----+-----+-----+-----+-----+-----+-----+ 120
AGTCAGAAGGAGAAGGGGGTTTGGGTTCTGTGGAGTACTAGAGGGCCTGGGACTC

a S V F L F P P K P K D T L M I S R T P E -
GTCACATGCGTGGTGGTGACGTGAGCCACGAAGACCCCTGAGGTCAAGTTCAACTGGTAC
121 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 180
CAGTGTACGCACCAACCACCTGCACTCGGTGCTCTGGACTCCAGTTCAAGTTGACCATG

a V T C V V V D V S H E D P E V K F N W Y -
GTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCCGGGAGGAGCAGTACAACAGC
181 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 240
CACCTGCCGCACCTCCACGTATTACGGTTCTGTTCGGCCCTCCTCGTCATGTTGTCG

a V D G V E V H N A K T K P R E E Q Y N S -
ACGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAAGGACTGGCTGAATGGCAAGGAG
241 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 300
TGCATGGCACACCAGTCGAGGAGTGGCAGGACGTGGCCTGACCGACTTACCGTTCTC

a T Y R V V S V L T V L H Q D W L N G K E -
TACAAGTGCAAGGTCTCCAACAAAGCCCTCCAGCCCCATCGAGAAAACCATCTCCAAA
301 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 360
ATGTTCACGTTCCAGAGGTGTTGGGAGGGTAGCTCTTTGGTAGAGGTTT

a Y K C K V S N K A L P A P I E K T I S K -
GCCAAAGGGCAGCCCCGAGAACACAGGTGTACACCCCTGCCCATCCGGATGAGCTG
361 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 420
CGGTTCCCGTCGGGCTTGGTGTCCACATGTGGACGGGGTAGGGCCCTACTCGAC

a A K G Q P R E P Q V Y T L P P S R D E L -
ACCAAGAACCAAGGTCAGCCTGACCTGCCTGGTCAAAGGCTCTATCCAGCGACATGCC
421 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 480
TGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGGTCGCTGTAGCGG

a T K N Q V S L T C L V K G F Y P S D I A -
GTGGAGTGGAGAGCAATGGCAGCCGGAGAACAAACTACAAGACCAACGCCCTCCGTGCTG
481 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 540
CACCTCACCCCTCGTTACCGTCGGCTTGTGATGTTCTGGTGCAGGGCACGAC

a V E W E S N G Q P E N N Y K T T P P V L -
GACTCCGACGGCTCCTTCTTCCCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAG
541 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 600
CTGAGGCTGCCAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCCACCGTC

a D S D G S F F L Y S K L T V D K S R W Q -

```

FIG. 25B

CAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAG
601 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 660
GTCCCCTTGCAGAAGAGTACGAGGCACCTACGTACTCCGAGACGTGTTGGTATGTGCGTC

a Q G N V F S C S V M H E A L H N H Y T Q -

AAGAGCCTCTCCCTGTCTCCGGTAAAGGTGGAGGTGGTGGTTGCACCACCCACTGGGGT
661 -----+-----+-----+-----+-----+-----+-----+-----+-----+ 720
TTCTCGGAGAGGGACAGAGGCCATTCCACCTCCACCACCAACGTGGTGGGTGACCCCA

A K S L S L S P G K G G G G G C T T H W G -

BamHI
|
TTCACCCCTGTGCTAATGGATCCCTCGAG
721 -----+-----+-----+-----+-----+-----+-----+-----+ 748
AAGTGGGACACGATTACCTAGGGAGCTC

a F T L C *

FIG. 26A

NdeI

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1  CATATGTGCACCACCCACTGGGTTTCACCTGTGCGGTGGAGGCGGTGGGACAAAGGT
  GTATACACGTGGTGGGTGACCCCAAAGTGGACACGCCACCTCCGCCACCCCTGTTCCA 60
a   M C T T H W G F T L C G G G G G D K G -
  GGAGGCGGTGGGACAAAACACACATGTCCACCTTGCCAGCACCTGAACCTGGGG 120
61  CCTCCGCCACCCCTGTTGAGTGTACAGGTGGAACGGTCGTGGACTTGAGGACCC
a   G G G D K T H T C P P C P A P E L L G -
  GGACCGTCAGTTTCCCTTTCCCCAAAACCCAAGGACACCCCTCATGATCTCCGGACC 180
121 CCTGGCAGTCAAAAGGAGAACGGGGTTTGGGTTCTGTGGAGTACTAGAGGGCCTGG
a   G P S V F L F P P K P K D T L M I S R T -
  CCTGAGGTACATGGTGGTGGACGTGAGGCCACGAAGACCCCTGAGGTCAAGTTAAC 240
181 GGACTCCAGTGTACGCACCACCTGCACTCGTGCTCTGGACTCCAGTTCAAGTTG
a   P E V T C V V V D V S H E D P E V K F N -
  TGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGGAGGAGCAGTAC 300
241 ACCATGCACCTGCCGACCTCACGTATTACGGTTCTGTTGGCCCTCGTCATG
a   W Y V D G V E V H N A K T K P R E E Q Y -
  AACAGCACGTACCGTGTGGTCAGCGCCTCACCGTCTGCACCAGGACTGGCTGAATGGC 360
301 TTGTCGTGCATGGCACACCAGTCGCAGGAGTGGCAGGACGTGGCCTGACCGACTTACCG
a   N S T Y R V V S V L T V L H Q D W L N G -
  AAGGAGTACAAGTGAAGGTCTCAAACAAAGCCCTCCCAGCCCCATCGAGAAAACATC 420
361 TTCCTCATGTTCACGTTCCAGAGGTTGTTGGGAGGGTAGCTTTGGTAG
a   K E Y K C K V S N K A L P A P I E K T I -
  TCCAAAGCCAAGGGCAGCCCCGAGAACACAGGTGTACACCCCTGCCCATCCGGGAT 480
421 AGGTTTCGGTTCCCGTCGGGCTCTGGTGTCCACATGTGGGACGGGGTAGGGCCCTA
a   S K A K G Q P R E P Q V Y T L P P S R D -
  GAGCTGACCAAGAACCAAGGTACGCGCTGACCTGCCTGGTCAAAGGCTCTATCCCAGCGAC 540
481 CTCGACTGGTTCTGGTCCAGTCGGACTGGACGGACCAGTTCCGAAGATAGGGTCGCTG
a   E L T K N Q V S L T C L V K G F Y P S D -
  ATCGCCGTGGAGTGGGAGAGCAATGGCAGCCGAGAACAACTACAAGACCAACGCCCTCCC 600
541 TAGCGGCACCTCACCCCTCGTTACCGTCGGCCTCTGGTGTGATGTTCTGGTGCAGGG
a   I A V E W E S N G Q P E N N Y K T T P P -

```

FIG. 26B

601 GTGCTGGACTCCGACGGCTCCTCTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGG 660
CACGACCTGAGGCTGCCGAGGAAGAAGGAGATGTCGTTGAGTGGCACCTGTTCTCGTCC

a V L D S D G S F F L Y S K L T V D K S R -

661 TGGCAGCAGGGAAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAAACCACTAC 720
ACCGTCGTCCCCCTTGCAGAAGAGTACGAGGCACACTACGTACTCCGAGACGTGTTGGTGTAG

a W Q Q G N V F S C S V M H E A L H N H Y -

BamHI

721 ACGCAGAAGAGCCTCTCCCTGTCTCCGGTAAATAATGGATCC 763
TGCCTCTCGGAGAGGGACAGAGGCCATTATTACCTAGG

a T Q K S L S L S P G K *